# Manner Adverbials and the Structure of Finnish Sentences: a Minimalist Approach

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# Declaration

This thesis has been composed by myself and it has not been submitted in any previous application for a degree. The work reported within was executed by myself, unless otherwise stated.

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# Abstract

This thesis focuses on manner adverbials and on the structure of Finnish sentences, addressing the following questions: why do Finnish manner adverbials have so many different forms, and where does the manner meaning come from in these different forms? How are manner adverbials licensed, and what is their original position of merge? Why do obligatory and optional manner adverbials have the same distribution? Why do they also behave in the same way in linguistic operations such as movement? Finally, why are there no constrainsts on the mutual ordering of Finnish manner, place, and time adverbials?

I begin by developing a system of structural and lexical case which allows us to analyse the different types of Finnish manner adverbials uniformly as K(ase)Ps; in other words, instead of dealing with DPs, AdjPs, NumPs, InfinitivalPs, and AdvPs, we are dealing with KPs which carry an inflectional ending and a feature for lexical case. I also show how the system of structural and lexical case developed here can be integrated into the theories of phrase structure proposed in Kayne (1994) Chomsky (1993; 1994; 1995) and related work, and into feature based systems of adverbials proposed in Laenzlinger (1996; 1998), Alexiadou (1997), and Cinque (1997). I then develop a system of phrase structure within which the VP consists of the lexical VP and one or more light vPs. I show that the number and types of light vPs directly correspond to the number and types of semantic features contained in the lexical V; the arguments of the lexical V are merged into the specifiers of light vPs, under semantic feature checking against the light v heads. I provide arguments for the claim that the original position of merge of Finnish manner adverbials is the specifier of a Manner-related light vP, on the basis of Finnish word order facts and the behaviour of negative polarity items. Finally, I show that Finnish manner, place and time adverbials are always fully licensed by semantic feature checking against the appropriate light v head; there is no need for any extra licensing conditions, such as the presence of an extra Davidsonian argument in the derivation.

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# List of Abbreviations

| | |
|---|---|
| 1, 2, 3sg | 1st, 2nd, 3rd person singular |
| 1, 2, 3pl | 1st, 2nd, 3rd person plural |

| | |
|---|---|
| pres | Present tense |
| past | Past tense |
| pass | Passive voice |
| pass.agr | Passive agreement |
| cond | Conditional mood |
| imp | Imperative mood |
| 1, 2, 3, 4inf | 1st, 2nd, 3rd, 4th infinitive |
| 1, 2pcp | 1st, 2nd participle |

| | |
|---|---|
| Nom | Nominative case |
| Gen | Genitive case |
| Acc | Accusative case |
| Dat | Dative case |
| Part | Partitive case |
| Ess | Essive case |
| Trans | Translative case |
| Iness | Inessive case |
| Ela | Elative case |
| Illat | Illative case |
| Adess | Adessive case |
| Abl | Ablative case |

| | |
|---|---|
| Allat | Allative case |
| Abess | Abessibe case |
| Com | Comitative case |
| Instr | Instructive case |
| | |
| Px | Possessive suffix |

# Chapter One

# Introduction

Finnish belongs to the Finno-Ugric branch of the Uralic languages, its closest relatives being the Baltic-Finnic languages Estonian, Karelian, Vepsian, Votian, Ludian, and Livonian. These started to diverge from late Proto-Finnic about 2,000 years ago, and it is estimated that Finnish had essentially reached its present state by the end of the first millennium. The more distant relatives include languages such as Sami, Mordvin, and Mari; the Permic languages Udmurt and Komi, and the Ugric languages Mansi, Khanty, and Hungarian, are also related. Today, there are some five million speakers of Finnish in the world, most of whom live in Finland. There also exist small Finnish speaking communities outside Finland, the most notable of these being in Sweden, Norway, USA and Canada.

Finnish as a written language is some 500 years old, dating back to Mikael Agricola's ABC-book from the first half of the 16th century. Many still influential Finnish grammars date back to the second half of the 19th century - this is when nationalist ideas started to gain ground in Finland, and promoting the status of Finnish, as opposed to the then dominant languages Swedish and Russian, was seen as a means of gaining autonomy, and eventually independence, from Imperial Russia. These grammars had prescriptive goals: their objective was to eliminate all foreign (mainly Swedish) expressions from Finnish. The tendency to avoid expressions that were of Swedish origin seems to have become even stronger during the first decades of Finnish independence in 1917. In present day Finnish, the influence of English is growing fast.

## 1.1. The Scope of Inquiry

This thesis focuses on Finnish manner adverbials and on the structure of Finnish

sentences. The following questions are taken as a starting point:

**(A)** Why do manner adverbials have so many different forms in Finnish? Where does the manner meaning come from in all the different forms?

**(B)** What allows the different types of manner adverbials to have the same syntactic functions? How, and in what structural position(s), are manner adverbials licensed?

**(C)** Why do the different types of manner adverbials have the same distribution in Finnish? And why do they behave in the same way in linguistic operations such as movement?

**(D)** Why cannot two manner adverbials usually co-occur in the same sentence?

**(E)** Why are there no constraints on the mutual ordering of Finnish sentence-final manner, place and time adverbials?

Similar questions are taken as a starting point also in Travis (1988), Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997). However, these studies mainly focus on adverbs, and have little to say about the licensing and distribution of the other categories functioning as adverbials. As a result, many important issues which are relevant for the study of Finnish adverbials in general, and manner adverbials in particular, are overlooked. In the following sub-sections, I explain what I mean by the term manner adverbial, and take a closer look at the individual problems.

### 1.1.1. Manner Meaning

Adverbials are usually discussed under classes that are semantically defined. Although terms like manner, place and time adverbial are in common use and seem self-explanatory, grammarians often fluctuate as to the types of elements that they take them to cover. For example, while some grammarians take the term manner adverbial to cover only those adverbials which denote pure manner, others assume that all elements capable of answering questions like "How?", "In what way/ manner/ fashion?" should be analysed as manner adverbials.

The idea that manner adverbials express various types of meanings is old and widespread - in Finnish, Setälä (1952) classifies elements such as *suomeksi* 'in Finnish' as manner adverbials, while most modern grammarians disagree. In English, Poutsma (1904, 204) treats elements expressing quality, attendant circumstances, restriction and exception, quantity, degree, proportion and mood as manner adverbials;

Jacobson (1964, 22), in turn, argues that "adverbials of manner answer questions like 'How?', 'In what manner (way)?'" and lists the categories of comparison, association, lack and separation, means, instrument, material, agent, and origin.

In the present thesis, I define the term manner adverbial rather widely, and take it to cover not only "pure" manner but also means and instrumental adverbials. This is because manner, means and instrumental meanings are closely intertwined, and it is often difficult to bring about a distinction between them - [1c-d] are from Quirk et al (1985, 482f.):

(1) a. *Sirkku hoit-i asia-n automaattisesti.*
Sirkku-Nom care-past-3sg matter-Acc automatically
'Sirkku took care of the matter automatically'

b. *Lääkäri hoit-i potilas-ta luonnollisesti.*
Doctor-Nom care-past-3sg patient-Part naturally
'The doctor cared for the patient naturally'

c. *The teacher assessed the student impressionistically.*

d. *She did it legally.*

In [1a] the adverbial *automaattisesti* 'automatically' is ambiguous between a "pure" manner ('in an automatic fashion') and a means/instrumental ('by means of using automation/some kind of machinery') reading. Similarly, in [1b] the adverbial *luonnollisesti* 'naturally' could be either a manner ('behaving in a very natural way') adverbial or a means/instrumental ('by using natural remedies') adverbial. In [1c], *impressionistically* could be paraphrased either 'in an impressionistic manner', 'subjectively' or 'by means of an impression-forming technique' while in [1d] the adverbial *legally* could mean something like 'quite legally, not illegally', 'by invoking the law' or 'with legal arguments'.

Manner adverbials can sometimes have a similar form to other adverbials as well; in [2a-b] the adverbials *kive-llä* 'stone-Adess' and *saha-lla* 'saw-Adess' could be interpreted as denoting either manner (instrument) or place; in [2c-d] it is difficult to tell whether the adverbials express "pure" manner, means or instrumentality, or whether they are meant to express the speaker's attitude or belief about what s/he is saying:

(2) a. *Sirkku murhas-i Pulmu-n kive-llä.*
Sirkku-Nom murder-past-3sg Pulmu-Acc stone-Adess
'Sirkku murdered Pulmu with a stone'
'Sirkku murdered Pulmu at/on/by/near a stone'

b. *Sirkku paloittel-i ruumii-n saha-lla.*
Sirkku-Nom cut-past-3sg body-Acc saw-Adess
'Sirkku cut up the body (into pieces) with a saw'
'Sirkku cut up the body (into pieces) at a saw-mill'

c. *Lääkäri hoit-i potilas-ta(,) luonnollisesti.*
Doctor-Nom care-past-3sg patient-Acc naturally
The doctor cared for the patient, naturally' (ie it was natural for the doctor to do so)

d. *She took care of the patient(,) amazingly.*

## 1.1.2. Realisation

As pointed out in Hakulinen (1941; 88ff.; 199ff.), Setälä (1952, 56f.; 66ff.; 78ff.; 113ff.; 125), Hakulinen & Karlsson (1979, 201f.) and Vilkuna (1996, 163ff.), Finnish manner adverbials can have the form of adverbs, nouns, adjectives, numerals, adpositional phrases, infinitivals and finite clauses. In line with much recent work, I assume that these are all maximal projections (XPs), rather than $X^0$ heads:[1]

(3) a. *Sirkku laulo-i kaunii-sti.* AdvP
Sirkku-Nom sing-past-3sg beautiful-Adv
'Sirkku sang beautifully'

b. *Sirkku saapu-i tyyli-llä.* DP[2]
Sirkku-Nom arrive-past-3sg style-Adess
Sirkku arrived with style'

c. *Sirkku kävel-i kova-a.* AdjP
Sirkku-Nom walk-past-3sg hard-Part
'Sirkku walked fast'

d. *Sirkku juoks-i tuhat-ta ja sata-a.* NumP
Sirkku-Nom run-past-3sg thousand-Part and hundred-Part
'Sirkku run very fast' (lit. thousand and hundred)

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[1] The idea that manner adverbials are maximal projections rather than $X^0$ heads is supported by the fact that they can undergo operations such as Wh- and Focus movement which are open to XPs but not to $X^0$s; I will provide examples of this in Chapter Four.

[2] Ever since Abney (1987) NPs have been analysed as D(eterminer)Ps, ie as projections of a D(eterminer) head selecting an NP as its complement. This view will be adopted here - I will discuss evidence for a D projection briefly in Chapter Four.

e. *Sirkku kasvo-i ilman kuri-a.* Prepos.P
Sirkku grow-past-3sg without discipline-Part
'Sirkku grew up without discipline'

f. *Sirkku kasvo-i kuri-n kanssa.* Postpos.P
Sirkku-Nom grow-past-3sg discipline-Gen with
'Sirkku grew up with discipline'

g. *Sirkku kävel-i ontu-ma-lla.* InfinitivalP
Sirkku-Nom walk-past-3sg limp-3inf-Adess
'Sirkku walked with a limp'

h. *Sirkku tappele-e siten että veri lentä-ä.* Finite IP
Sirkku-Nom fight-pres-3sg so that blood-Nom fly-pres-3sg
'Sirkku fights in such a way that blood flows'

Attempts have been made to relate the manner meaning of the adverbial to its form. For example, according to Laaksonen & Lieko (1992, 117) Finnish manner adverbials which have the form of adverbs have typically been derived from adjectival or noun stems, by means of the affixes *-sti, -ten, -ti, -tta, and -(i)ttain:*

(4) a. *paha-sti* 'badly'; *kaunii-sti* 'beautifully'; *onnellise-sti* 'happily'
b. *tä-ten* 'thus'; *parhai-ten* 'the best'
c. *huole-ti* 'without any worries'; *ääne-ti* 'without a sound'
d. *suo-tta* 'without a reason'
e. *helsinkiläis-ittäin* 'Helsinki-style'

Setälä (1952, 66ff.) observes that Finnish manner adverbials which have the form of nouns typically inflect for the Adessive, Instructive, Abessive, Partitive, Translative, or Illative case:

(5) a. *ilo-lla* 'joy-Adess ie with joy'; *kova-lla ääne-llä* 'loud-Adess voice-Adess ie with loud voice'
b. *varka-i-n* 'thief-pl-Instr ie discreetly'
c. *kuri-tta* 'discipline-Abess ie without discipline'
d. *kova-a vauhti-a* 'hard-Part speed-Part ie with great speed'
e. *elää herro-i-ksi* 'live gentleman-pl-Trans 'to live luxuriously'; *puhua suome-ksi* 'speak Finnish-Trans ie to speak in Finnish'
f. *sii-hen tapa-an* 'that-Illat way-Illat ie that way'

Finally, it seems that manner adverbials which have the form of AdjPs and NumPs typically inflect for the Adessive and Partitive case while InfinitivalPs inflect for the

Adessive, Abessive and Instructive case:[3]

(6) a. *täysi-llä* 'full-Adess ie hard, fast'
b. *kova-a* 'hard-Part ie hard, fast'
c. *tuha-tta ja sata-a* 'thousand-Part and hundred-Part ie very fast'
d. *ontu-ma-lla* 'limp-3inf-Adess ie with a limp'
e. *ontu-ma-tta* 'limp-3inf-Abess ie without a limp'
f. *ontu-e-n* 'limp-2inf-Instr ie with a limp'

In [4] through [6], it is reasonable to suppose that the manner meaning originates from, or is somehow brought about by, the derivational or the inflectional affix: adjectival, noun, numeral and infinitival stems do not receive manner interpretations in Finnish, but the combinations of such stems and the derivational affixes *-sti, -ten, -ti, -tta,* and *-(i)ttain* or the inflectional case endings *-lla, -n, -tta, -a/-ta, -ksi, -na* and *-aan/-hin* often do. But how can the same meaning originate from two completely different types of affixes? And how reasonable is it to suppose that we *are* dealing with two different types of affixes? Finally, how do PPs fit into the picture? If adjectival, noun, numeral and infinitival stems receive a manner interpretation by virtue of combining with an appropriate derivational affix or inflectional case ending, then what brings about this interpretation in Finnish PPs?

### 1.1.3. Syntactic Function

On the basis of their syntactic function, Hakulinen & Karlsson (1979, 202ff.) divide Finnish adverbials into five categories. They begin by making a distinction between *free* and *integrated* adverbials. The former modify whole sentences; they are divided further into comments, like those in [7a], and connectives, like those in [7b]:

(7) a. *ehdottomasti* 'absolutely'; *valitettavasti* 'unfortunately'
b. *näin ollen* 'hence'; *lisäksi* 'in addition'

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[3] Note, though, that there is no one-to-one correspondence in Finnish between an inflectional case ending and a particular meaning. For example, the case endings listed here do not always bring about manner meaning: the Adessive case ending *-lla* could also bring about a locative meaning, as in *Sirkku istuu ranna-lla* 'Sirkku is sitting on the beach'. I will provide more examples of this in Chapter Four.

Integrated adverbials modify either whole sentences or just verbs/VPs. Integrated sentence modifying adverbials are divided further into *obligatory* adverbials, such as those in [8a-b], and *optional* adverbials, such as those in [9a-b]:[4]

(8) a. *Sirku-lle käv-i köpelösti.*
Sirkku-Allat fare-past-3sg badly
'Things turned out badly for Sirkku'

b. *Ranna-lla leikki-i laps-i-a.*
Beach-Adess play-pres-3sg child-pl-Part
'There are children playing on the beach'

c. **Käv-i köpelösti.*
Fare-past-3sg badly

d. **Leikki-i laps-i-a.*
Play-pres-3sg child-pl-Part

(9) a. *Ruotsi-ssa syö-dä-än hapansilakka-a.*
Sweden-Iness eat-pass-agr soured herring-Part
'In Sweden people eat soured herring'

b. *Sirkku juoks-i olympialais-i-ssa maailmanennätykse-n.*
Sirkku-Nom run-past-3sg Olympics-pl Iness world record-Acc
'In the Olympics, Sirkku run a world record'

c. *?Syö-dä-än hapansilakka-a.*
Eat-pass-agr soured herring-Part
'People eat soured herring'

d. *Sirkku juoks-i maailmanennätykse-n.*
Sirkku-Nom run-past-3sg world record-Acc
'Sirkku ran a world record'

[10a-b] and [11a-b] provide examples of Hakulinen & Karlsson's obligatory

[4] Hakulinen and Karlsson (1979, 202ff.) distinguish between two types of locative adverbials: some, like those in [8a-b] and [9a-b], function as obligatory and optional sentence modifiers. Others, like those given in [10a-b] and [11a-b], function as obligatory and optional verb/VP modifiers. Hakulinen & Karlsson refer to optional sentence modifying adverbials as "frame" adverbials, proposing that they give the spatial and temporal location of the action described by the sentence. Huumo (1997) argues that "frame" adverbials appear higher up in the structure than verb/VP modifying locative adverbials - hence, they have scope over the verb/VP modifying adverbials. Huumo calls "frame" adverbials space adverbials or locative space building adverbials. In the present thesis, I use the term *locative adverbial* to refer to the structurally higher locative adverbials, and the term *place adverbial* to refer to the structurally lower locative adverbials. For more discussion on the properties of Finnish locative adverbials, and on the distinction between locative and place adverbials, see Hakulinen & Karlsson (1979, 202ff.) and Huumo (1997). See also Chapters Five and Six below.

and optional verb/VP modifying adverbials:

(10) a. *Sirkku käyttäyty-i huonosti.*
Sirkku-Nom behave-past-3sg badly
'Sirkku behaved badly'

b. *Sirkku men-i Pihtiputaa-lle.*
Sirkku-Nom go-past-3sg Pihtipudas-Allat
'Sirkku went to Pihtipudas'

c. **Sirkku käyttäyty-i.*
Sirkku-Nom behave-past-3sg

d. **Sirkku men-i.*
Sirkku-Nom go-past-3sg

(11) a. *Sirkku kävele-e ontu-ma-lla.*
Sirkku-Nom walk-pres-3sg limp-2inf-Adess
'Sirkku walks with a limp'

b. *Sirkku juokse-e ranna-lla.*
Sirkku-Nom walk-pres-3sg beach-Adess
'Sirkku walks on the beach'

c. *Sirkku kävele-e.*
Sirkku-Nom walk-pres-3sg
'Sirkku walks'

d. *Sirkku juokse-e.*
Sirkku-Nom run-pres-3sg
'Sirkku runs'

Unlike sentence modifiers, Finnish obligatory and optional verb/VP modifiers appear in sentence final positions (in neutral, syntactically unmarked sentences) - when they appear sentence initially, the sentence has syntactically marked word order:

(12) a. *Huonosti Sirkku käyttäyty-i.*
Badly Sirkku-Nom behave-past-3sg
'It was badly that Sirkku behaved'

b. *Pihtiputaa-lle Sirkku men-i.*
Pihtipudas-Allat Sirkku-Nom go-past-3sg
'It was to Pihtipudas that Sirkku went '

(13) a. *Ontu-ma-lla Sirkku kävele-e.*
Limp-2inf-AdessSirkku-Nom walk-pres-3sg
'It is with a limp that Sirkku walks'

b. *Ranna-lla Sirkku juokse-e.*
Beach-Adess Sirkku-Nom walk-pres-3sg
'It is on the beach that Sirkku walks'

In line with Jackendoff (1972; 1977, 64ff.), McConnell-Ginet (1982), Vilkuna (1996, 164f.) and Alexiadou (1997, 6) I assume that manner adverbials are either obligatory or optional verb/VP modifiers. In other words, they are obligatory arguments of the lexical V, or *adjuncts*. In the former case, they cannot be removed from the sentence without causing ungrammaticality or a change in interpretation, while in the latter case, they can usually be removed from the sentence without any such consequences. As shown in [14] and [15], the form of the adverbial does not affect its ability to function as an obligatory argument of the lexical V, or as an adjunct:[5]

(14) a. *Sirkku käyttäyty-i huono-sti/ kunno-lla.*
Sirkku-Nom behave-past-3sg badly/ proper-Adess
'Sirkku behaved badly/properly'

b. **Sirkku käyttäyty-i.*
Sirkku-Nom behave-past-3sg

c. *Sirku-lle käv-i köpelö-sti/ ikävä-llä tava-lla.*
Sirkku-Allat fare-past-3sg badly/ nasty-Adess way-Adess
'Things turned out badly/ in a nasty way for Sirkku'

d. **Sirku-lle käv-i.*
Sirkku-allat fare-past-3sg

(15) a. *Sirkku kohtele-e Pulmu-a huono-sti/ ilkeä-llä tava-lla.*
Sirkku-Nom treat-pres-3sg Pulmu-Part bad-Adv/ mean-Adess way-Adess
'Sirku treats Pulmu badly/ in a mean way (meanly)'

b. **Sirkku kohtele-e Pulmu-a.*
Sirkku-Nom treat-pres-3sg Pulmu-Part

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[5] Instead of using the terms obligatory argument of the lexical V and adjunct, I will speak of *obligatory* and *optional arguments* of the lexical V in this thesis. I will discuss reasons for this in Chapters Five and Six. McConnell-Ginet (1982) calls sentence modifying adverbials *Ad-Sentences,* verb modifying adverbials *Ad-verbs.* She argues that the role of Ad-verbs, whether they be obligatory or optional, is to change verbal predicates into larger verbal predicates with the same properties. Thus, Ad-verbs are functions over predicates, in the sense that the Ad-verb and the predicate together denote a subset of the set of events denoted by the predicate alone. Note that McConnell-Ginet only discusses adverbs; the similarities between adverbs and the other categories are not dealt with. Because adverbs and the other categories have the same syntactic functions in the sentence, it seems reasonable to suppose that they can all be analysed as functions over predicates.

c. *Sirkku suhtautu-u asia-an kunnioittava-sti/ kunnioitukse-lla/ naureskele-ma-lla.*
Sirkku-Nom take-pres-3sg matter-sg-Illat respectfully/ respect-Adess/ laugh-3inf-Adess
'Sirkku regards/ treats the matter respectfully/ with respect/ sneeringly'

d. **Sirkku suhtautu-u asia-an.*
Sirkku-Nom take-pres-3sg matter-sg-Illat

## 1.1.4. Licensing and Distribution

Travis (1988), Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997) provide detailed accounts of the licensing and distribution of adverbs. However, since their main focus falls on adverbs/AdvPs, they have very little to say about the licensing and distribution of DPs, AdjPs, NumPs, PPs and InfinitivalPs. Secondly, some of these accounts are also problematic for the study of Finnish. For example, although Travis acknowledges that adverbs and the other categories can have a similar meaning, she argues that they differ in their distribution, and should therefore be distinguished syntactically.

Because in Travis' system, adverbs and the other categories are subject to different licensing conditions, they are inserted into different structural positions. However, the Finnish data in [16a-f] and [17a-f] suggest that adverbs and the other categories, when they function as obligatory and optional arguments of the lexical V, have more similarities than differences in their distribution. Hence, there is no real basis for a syntactic distinction between them on (purely distributional grounds):[6]

(16) a. *Sirkku käyttäyty-i hyvin/ kunno-lla.*
Sirkku-Nom behave-past3sg well/ properness-Adess
'Sirkku behaved well/ properly'

b. *Sirkku hyvin/ kunnolla käyttäytyi.*
'Sirkku well/ properly behaved'
('It was SIRKKU who behaved well/properly')

[6] Note that the sentences in [16a] and [17a] have neutral, syntactically unmarked word order whereas the ones in [16b-f] and [17b-f] have syntactically marked word order, in the sense that one of the constituents is interpreted as receiving extra focus of some kind - the (rough) English equivalents of [16b-f] and [17b-f] are given inside brackets. In the present thesis, I will mainly concentrate on sentences which have neutral syntactically unmarked word order; I will have very little to say about sentences involving focusing.

c. *Käyttäytyi Sirkku hyvin/ kunnolla.*
'Behaved Sirkku well/ properly'
('Sirkku DID behave well/properly')

d. *?Käyttäytyi hyvin/ kunnolla Sirkku.*
'Behaved well/properly Sirkku'
('It was SIRKKU who DID behave well')

e. *Hyvin/ kunnolla Sirkku käyttäytyi.*
'Well/ properly Sirkku behaved'
('It WAS well/properly that Sirkku behaved')

f. *Hyvin/ kunnolla käyttäytyi Sirkku.*
'Well/ properly behaved Sirkku'
('It was SIRKKU who behaved well')

(17) a. *Sirkku kävele-e vauhdil-la/ ontu-ma-lla/ nopea-sti.*
Sirkku-Nom walk-pres-3sg speed-Adess/ limp-3inf-Adess/ fast
'Sirkku walks with speed/ with a limp/ fast'

b. *Sirkku vauhdilla/ ontumalla/ nopeasti kävelee.*
'Sirkku with speed/ with a limp/ fast walks'
('It is SIRKKU who walks with speed with a limp/ fast'

c. *Kävelee Sirkku vauhdilla/ ontumalla/ nopeasti.*
'Walks Sirkku with speed/ with a limp/ fast '
('Sirkku DOES walk with speed with a limp/ fast')

d. *?Kävelee vauhdilla/ ontumalla/ nopeasti Sirkku.*
'Walks with speed/ with a limp/ fast Sirkku'
('It is SIRKKU who DOES walk with speed with a limp/ fast')

e. *Vauhdilla/ ontumalla/ nopeasti Sirkku kävelee.*
'With speed/ with a limp/ fast Sirkku walks'
('It IS with speed with a limp/ fast that Sirkku walks')

f. *Vauhdilla/ ontumalla/ nopeasti kävelee Sirkku.*
'With speed/ with a limp/ fast walks Sirkku'
('It is SIRKKU who walks with speed with a limp/ fast')

The question that we are now asking is this: why do the different types of manner adverbials have the same distribution in Finnish? Secondly, why do they have the same distribution even when they function as obligatory and optional arguments of V (in [16], the manner adverbials are obligatory while in [17], they are optional arguments of the lexical V)?

## 1.1.5. Co-occurrence Restrictions

The sentences in [18a-d] suggest that two manner adverbials cannot usually co-occur in

the same sentence:[7]

(18) a. **Sirkku asu-u ylellise-sti holtittoma-sti.*
Sirkku-Nom live-pres-3sg luxuriously carelessly
'Sirku lives luxuriously carelessly'

b. **Sirkku käyttäyty-i kunno-lla ystävällise-sti.*
Sirkku-Nom behave-past-3sg properness-Adess kindly
'Sirkku behaved properly kindly'

c. **Sirkku laulo-i kova-a kaunii-sti.*
Sirkku-Nom sing-past-3sg hard-Part beautifully
'Sirkku sang loudly beautifully'

d. **Sirkku kävele-e nopea-sti varo-e-n.*
Sirkku-Nom walk-pres-3sg quickly care-1inf-Instr
'Sirkku walks fast with a limp'

If Travis (1988) was corrrect in saying that adverbs and the other categories are subject to different licensing conditions so that they appear in different structural positions, then the ungrammaticality of sentences such as [18a-d] would be quite unexpected. In other words, if adverbs and the other categories were licensed in different structural positions, then the fact that they cannot co-occur in the same sentence would be problematic.

## 1.1.6. The Linear Ordering of Manner, Place and Time Adverbials

The linear ordering of Finnish direct objects with regard to manner, place and time adverbials is fixed: the sentences in [19a-c] have neutral, syntactically unmarked word order while the ones in [20 a-b] have a syntactically marked word order, in the sense that they focus the sentence-final direct objects:[8]

---

[7] Although sentences such as *Sirkku sings loudly beautifully* may sound acceptable to some speakers, there are reasons to believe that the two adverbials *loudly* and *beautifully* form a complex constituent of some kind, or that they do not modify the same elements (eg one of the adverbials modifies the verb while the other one modifies the VP or the whole sentence - *loudly* could modify just the verb *sing*, while beautifully could modify the complex constituent *sing loudly*). Note that manner and means/instrumental adverbials can sometimes co-occur: *Sirkku killed him skilfully with an axe.* But even here it seems reasonable to suppose that the two adverbials form a complex constituent, or modify different elements.

[8] See eg Vilkuna (1989; 1995) and Hakulinen & Karlsson (1979, 301ff.). The idea that sentence final direct objects are focussed in sentences such as [15d-f] is also presented (on the basis of Italian and Hebrew data) in Belletti & Shlonsky (1995).

(19) a. *Sirkku ampui Pulmun taitavasti.*
'Sirkku shot Pulmu skilfully'

b. *Sirkku ampui Pulmun rannalla.*
'Sirkku shot Pulmu on the beach'

c. *Sirkku ampui Pulmun keskiviikkona.*
'Sirkku shot Pulmu on Wednesday'

(20) a. *Sirkku ampui taitavasti Pulmun.*
'It was PULMU that Sirkku shot skilfully'

b. *Sirkku ampui rannalla Pulmun.*
'It was PULMU that Sirkku shot on the beach'

c. *Sirkku ampui keskiviikkona Pulmun.*
'It was PULMU that Sirkku shot on Wednesday'

However, [21a-f] show that there is no constraint on the mutual ordering of Finnish sentence final manner, place and time adverbials. All the examples in [21] have equally neutral, syntactically unmarked word order, in the sense that none of the constituents is interpreted as receiving extra focus - if we use the question/answer test to determine the focus structure of [21a-f] we see that the sentences can serve as answers to the same question (ie they can all serve as answers to the question 'What happened?'):

(21) a. Sirkku ampui Pulmun *taitavasti rannalla keskiviikkona.*
'Sirkku shot Pulmu skilfully on the beach on Wednesday'

b. *Sirkku ampui Pulmun taitavasti keskiviikkona rannalla.*
'Sirkku shot Pulmu skilfully on Wednesday on the beach'

c. *Sirkku ampui Pulmun rannalla taitavasti keskiviikkona.*
'Sirkku shot Pulmu on the beach skilfully on Wednesday'

d. *Sirkku ampui Pulmun rannalla keskiviikkona taitavasti.*
'Sirkku shot Pulmu on the beach on Wednesday skilfully'

e. *Sirkku ampui Pulmun keskiviikkona taitavasti rannalla.*
'Sirkku shot Pulmu on the beach skilfully on Wednesday'

f. *Sirkku ampui Pulmun keskiviikkona rannalla taitavasti.*
'Sirkku shot Pulmu on Wednesday on the beach skilfully'

The question that arises is this: why do Finnish manner, place and time adverbials show such freedom of distribution with regard to each other, but not with regard to direct objects?

### 1.1.7. Episodes, Habits and Qualities

One final question that I will address in this thesis is: why can manner adverbials appear with different types of predicates (ie why can they appear with both stage level and individual level predicates or, as I will call them, with episodic, habitual and quality predicates), but it is unclear if place and time adverbials can also appear with the same set of predicates? In other words, why are the sentences in [22a-c] and [23a] fine, while the ones in [23b-c] seem to require the presence of a special facilitating context?

(22) a. *Sirkku laula-a aario-i-ta hyvin.*
Sirkku-Nom sing-pres-3sg aria-pl-Part well
'Sirkku sings arias well

b. *Sirkku laula-a aario-i-ta olohuonee-ssa.*
Sirkku-Nom sing-pres-3sg aria-pl-Part living room-sg-Iness
'Sirkku sings arias in the living room'

c. *Sirkku laula-a aario-i-ta keskiviikko-na.*
Sirkku-Nom sing-pres-3sg aria-pl-Part Wednesday-Ess
'Sirkku sings arias on Wednesday'

(23) a. *Sirkku osa-a aario-i-ta hyvin.*
Sirkku-Nom know-pres-3sg aria-pl-Part well
'Sirkku knows arias well'

b. *#Sirkku osa-a aario-i-ta olohuonee-ssa.*
Sirkku-Nom know-pres-3sg aria-pl-Part living room-Iness
'Sirkku knows arias in the living room'

c. *#Sirkku osa-a aario-i-ta keskiviikko-na.*
Sirkku-Nom know-pres-3sg aria-pl-Part Wednesday-Ess
'Sirkku knows arias on Wednesday'

Having now introduced the problems that are taken as a starting point in this thesis, I move on to discuss the basic morphological properties of Finnish in Section 1.2.

## 1.2. Introduction to Finnish Morphology

Finnish, like many other Finno-Ugrig languages, is highly agglutinating and has rich derivational and inflectional morphology. It has been proposed that Finnish has up to six different types of morphemes; these include lexical stem morphemes (*Vartalot*),

derivational affixes (*Johtimet*), inflectional affixes (*Tunnukset*), endings (*Päätteet*), possessive suffixes (*Omistusliitteet*), and clitics (*Liitepartikkelit; Liitteet*). Lexical stem morphemes are free while all the other morphemes are bound. The examples in [24] are from Laaksonen & Lieko (1992, 25ff.):[9]

| | | | |
|---|---|---|---|
| (24) a. | *talo-ssa* | Vartalo | 'in a house' |
| b. | *ist-aht-aa* | Johdin | 'to sit down (for a moment)' |
| c. | *koulu-i-ssa* | Tunnus | 'in the schools' |
| d. | *koulu-i-ssa* | Pääte | 'in the schools' |
| e. | *kirja-nsa* | Omistusliite | 'her/his book' |
| f. | *hän-kö* | Liitepartikkeli | 's/he (interrogative)' |

In this thesis, I will speak of stem morphemes, such as [24a], derivational suffixes, such as [24b], inflectional suffixes, like those in [24c-e], and clitics, such as [24f].

Finnish stem morphemes can be divided into three categories on the basis of their distinct inflectional properties. These categories are called nominals (*Nominit*), verbs (*Verbit*), and particles (*Partikkelit*). Clitics are the only bound morphemes capable of adjoining to all three categories. Finnish clitics are typically affixes such as *-kin, -kaan/-kään, -han/-hän* and *-ko/-kö,* the main function of which is to emphasize some individual words, or to form yes-no questions. These two functions are illustrated in [25a-b] and [25c-d], respectively:

(25) a. *Minä-kin tulin./ Minä tulin-kin.*
'I also came/ I came after all'

b. *Minä-kään en tullut./ Minä en tullut-kaan.*
I did not come either/ I did not come after all'

c. *Sinä-kö tulet mukaan?*
'You are coming as well?

d. *Tulet-ko sinä mukaan?*
'Are you coming as well?'

---

[9] See also the classification of morphemes in Hakulinen & Karlsson (1979, 73ff.), Karlsson (1983, 16ff.), Laaksonen & Lieko (1992, 25ff.) and Leino (1995, 4f.). Alterations in the internal form of the stem morpheme are caused by phenomena such as assimilation, vowel harmony and consonant gradation. Vowel harmony requires all vowels in a word to be either front or back vowels, /e/ and /i/ occurring with either type (consider *yöpyä* 'to spend the night' vs **yapya*). Consonant gradation refers to the alternation of the plosives /k/, /p/ and /t/ with Ø in closed syllables (consider *kukka-kukat* 'flower-flowers' and *rapu-ravut* 'crab-crabs'). Assimilation, vowel harmony and consonant gradation are also discussed in Karlsson (1983, 36ff.) and in Laaksonen & Lieko (1992, 36ff.).

In the following sub-sections, I discuss the distinct morphological properties of each of the three categories. I begin by looking at nominals.

### 1.2.1. Nominals (*Nominit*)

Finnish nominals consist of the traditional word classes of nouns, adjectives, numerals and pronouns. They take inflectional affixes for the plural number, case and agreement. The plural number is indicated by *-t* in the Nominative and Accusative case, and by *-i-* in all other cases:[10]

(26) a. *talo*
house-sg-Nom

b. *talo-t*
house-pl-Nom

c. *talo-ssa*
house-sg-Iness

d. *talo-i-ssa*
house-pl-Iness

Finnish nominals also inflect for case. There are some fifteen morphological cases in Finnish. These include four structural/grammatical cases and approximately eleven lexical/semantic cases. In this thesis, I speak of structural and lexical cases. Note, though, that I am using these terms only for convenience, and that I am *not* adopting any particular line of thinking behind them. The Finnish lexical cases are divided further into (abstract, internal and external) locative cases and marginal cases:[11]

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[10] Morphological categories need not always have an overt phonological realization. Phonologically null representations of morphological categories are sometimes represented as Ø, as in *talo-Ø-Ø-ni* 'house-sg-Nom-Px ie my house'.

[11] Setälä (1952) classifies Partitive case as a lexical (as an abstract locative) case while most other grammarians, including Hakulinen & Karlsson (1979) and Vilkuna (1996), assume that it is a structural case. In Chapter Four, I will propose that the Finnish Partitive case can be both a structural and a lexical case. Some discussion on the status of the Finnish Partitive as a structural or lexical case can also be found in Vainikka & Maling (1996).

| ***Structural cases:*** | *Singular* | *Plural* |
|---|---|---|
| Nominative | Omena-Ø 'apple' | Omena-t 'apples' |
| Genetive | Omena-n | Omeno-i-den |
| Partitive | Omena-a | Omeno-i-ta |
| Accusative | Omena-n | Omena-t |
| ***Lexical cases:*** | | |
| *Abstract locatives*: | | |
| Essive | Omena-na | Omeno-i-na |
| Translative | Omena-ksi | Omeno-i-ksi |
| *Internal Locatives:* | | |
| Inessive | Omena-ssa | Omeno-i-ssa |
| Elative | Omena-sta | Omeno-i-sta |
| Illative | Omena-aan | Omeno-i-hin |
| *External Locatives:* | | |
| Adessive | Omena-lla | Omeno-i-lla |
| Ablative | Omena-lta | Omeno-i-lta |
| Allative | Omena-lle | Omeno-i-lle |
| *Marginal Cases:* | | |
| Abessive | Omena-tta | Omeno-i-tta |
| Comitative | – | Omeno-i-ne-en |
| Instructive | – | Omeno-i-n |

Turning now to look at agreement, Finnish nominals display altogether four different types of agreement. Firstly, modifiers of nouns display case and number agreement with the head noun:

(27) a. *[Si-tä vanha-a kettu-a] on ihan mahdoton huija-ta.*
that-Part old-Part fox-Part be quite impossible fool-1inf
'It is quite impossible to fool that old fox'

b. *[Nii-tä vanho-j-a kettu-j-a] on ihan mahdoton huija-ta.*
those-Part old-pl Part fox-pl-Part be quite impossible fool-1inf
'It is quite impossible to fool those old foxes'

Besides case and number agreement with the head noun in NPs/DPs, Finnish nominals also show number agreement in copular constructions (see [28a-b] below), subject-verb agreement between the subject and finite verb (see [29a-b]), and possessive agreement between the possessor and the possessed thing (see [30a-b]):[12]

[12] Note that in standard Finnish, the possessive pronouns can usually be left out, the possessive suffixes carrying all the necessary information. In colloquial Finnish, the possessive suffixes, rather than the possesstive pronouns, are left out: consider eg *mun*
(continued ⇒)

(28) a. *Pulmu o-n puheenjohtaja.*
Pulmu-Nom be-pres-3sg chairperson-sg-Nom
'Pulmu is the chairperson'

b. *Tytö-t o-vat puheenjohtaj-i-a.*
Girl-pl-Nom be-pres-3pl chairperson-pl-Part
'The girls are chairpersons'

(29) a. *Pulmu kävele-e.*
Pulmu-Nom walk-pres-3sg
'Pulmu walks'

b. *Tytö-t kävele-vät.*
Girl-pl-Nom walk-pres-3pl
'The girls walk'

(30) a. *Minun omena-ni*
My apple-Nom-Px
'My apple'

b. *Meidän omena-mme*
Our apple-Nom-Px
'Our apple'

### 1.2.2. Verbs (*Verbit*)

The second inflectional category of Finnish words consists of verbs, which can be either finite or non-finite. Considering finite verbs first, they must always inflect for agreement: active finite verbs inflect for subject-verb agreement while passive finite verbs inflect for passive agreement:[13]

(31) a. *Naura-n*
Laugh-1sg
'I laugh'

b. *Nauro-i-mme.*
Laugh-past-1pl
'We laughed'

---

*omena* 'my apple', *sun omena* 'your(sg) apple', *meidän omena* 'our apple', *teidän omena* 'your(pl) apple'.

[13] *-an* is analysed as an affix for passive agreement in Setälä (1948, 112ff.), Karlsson (1983, 169ff.) and Laaksonen & Lieko (1992, 85ff.); I will return to this in Chapter Two. Note that Finnish is a partial pro-drop language: an overt subject must be present only with third person subjects.

c. *Naure-ta-an.*
Laugh-pass-pass.agr
'Is laughed'

Besides subject-verb agreement, Finnish finite verbs also inflect for tense, mood and voice:

(32) a. *Nauro-i-t.*
Laugh-past-2sg
'You laughed'

b. *Naura-isi-tte.*
Laugh-cond-2pl
'You would laugh'

c. *Naure-tt-i-in.*
Laugh-pass-past-pass.agr
'Was laughed'

d. *Naure-tta-isi-in.*
Laugh-pass-cond-pass.agr
'Would be laughed'

In Finnish, present and past perfect tenses are formed by means of the auxiliary *olla*. As shown in [33a-d], the Finnish *olla* inflects for subject-verb agreement and for tense and mood, the lexical verb being participial:

(33) a. *Ole-n naura-nut.*
Be-pres-1sg laugh-2pcp
'I have laughed'

b. *Ol-i-n naura-nut.*
Be-past-1sg laugh-2pcp
'I had laughed'

c. *Ol-isi-n naura-nut.*
Be-cond-1sg laugh-2pcp
'I would have laughed'

d. *Minu-lle o-n naure-tt-u.*
I-Allat be-pass.agr laugh-pass-2pcp
'I have been laughed at'

In negative sentences, the Finnish negative verbal element *ei* inflects for subject-verb agreement, whereas the lexical verb or the auxiliary *olla* inflects for tense or mood. Note that the morpheme *-nut/-neet* can have two different functions in Finnish; it can be an allomorph of the past tense morpheme *-i*, as in the verb *naura-neet* in [34b] and *ol-leet* in [34e], or it can be a morpheme for the 2nd participial, as in the verb *naura-nut* in

[33a-d], and in the verb *naura-neet* in [34d-f]:

(34) a. *E-mme naura.*
Neg-1pl laugh-pres
'We don't laugh'

b. *E-mme naura-neet.*
Neg-1pl laugh-past
'We did not laugh'

c. *E-mme naura-isi.*
Neg-1pg laugh-cond
'We would not laugh'

d. *E-mme ole naura-neet.*
We-1pl be-pres laugh-2pcp
'We have not laughed'

e. *E-mme ol-leet naura-neet.*
Neg-1pl be-past laugh-2pcp
'We had not laughed'

f. *E-mme ol-isi naura-neet.*
Neg-1pl be-cond laugh-2pcp
'We would not have laughed'

Turning now to infinitivals and participials, Finnish distinguishes between 3-5 infinitival and 2-3 participial forms. The following division of infinitivals into four subcategories is based on Vilkuna (1996, 238ff.). The types of case endings that Finnish infinitivals take is limited to the ones listed here; only -te- inessives and -ma- instructives can have passive forms in Finnish: *syö-tä-e-ssä* 'eat-pass-2inf-Iness' and *syö-tä-mä-n* 'eat-pass-2inf-Instr':[14]

| | | | |
|---|---|---|---|
| 1inf | basic form | *syö-dä* | 'to eat' |
| (-ta- ) | translative | *syö-dä-kse-ni* | 'for me to eat' |
| 2inf | inessive | *syö-de-ssä (+Px)* | 'while eating' |
| (-te- ) | instructive | *syö-de-n* | '(by) eating' |
| 3inf | inessive | *syö-mä-ssä* | 'eating (right now)' |
| (-ma- ) | elative | *syö-mä-stä* | 'from eating' |
| | illative | *syö-mä-än* | 'to go and eat' |

[14] There are changes in the form of the morpheme, due to vowel harmony, consonant gradation and assimilation: *ta* can be realised as *a, da, la, na, ra,* and *te* as *e, de, le, ne, re*. For more discussion on Finnish infinitivals and participials, see eg Karlsson (1979, 179ff.), Laaksonen & Lieko (1992, 94ff.), Holmberg et al (1993), Leino (1995, 83ff.) and Vilkuna (1996, 237ff.).

| | | | |
|---|---|---|---|
| | adessive | *syö-mä-llä* | 'by means of eating' |
| | abessive | *syö-mä-ttä* | 'without eating' |
| | instructive | *syö-mä-n (+Px)* | '(you are) to eat' |
| 4inf | nominative | *syö-minen* | 'eating (noun)' |
| (-minen ) | partitive | *syö-mis-tä* | 'about eating' |

Participials take a much wider range of case endings and possessive suffixes in Finnish than infinitivals. Some can also be followed by the plural morpheme. The -va-participial is referred to as the present participial (or, the 1st participial), the -nut/-neet participial as the past participial (the 2nd participial). The -maton participial is referred to as the negative participial (see eg Laaksonen & Lieko 1992, 98):

(35) a. *sula-va-a suklaa-ta*
melt-1pcp-Part chocolate-Part
'some chocolate that is melting'

b. *sula-nut-ta suklaa-ta*
melt-2pcp-Part chocolate-Part
'some chocolate that has melted'

c. *sula-maton-ta suklaa-ta*
melt-pcp-Part chocolate-Part
'some chocolate that has not melted'

Finnish participials (apart from the -maton participial) can have both active and passive forms:

| | Active | Passive |
|---|---|---|
| I participle | sg: *syö-vä* | *syö-tä-vä* |
| (-va- ) | pl: *syö-vä-t* | *syö-tä-vä-t* |
| II participle | sg: *syö-nyt* | *syö-ty* |
| (-nut/-neet ) | pl: *syö-neet* | *syö-dy-t* |
| Agent participle | - | *syö-mä-Px* |
| (-ma- ) | | |
| -maton | *syö-mätön* | |

## 1.2.3. Particles (*Partikkelit*)

The most important feature distinguishing particles from nominals and verbs is that particles can usually only be followed by clitics. Originally, Finnish particles seem to

have consisted of nominal and verb stems which were followed by inflectional affixes. Setälä (1948, 131ff.) gives the following examples of this: *taha-lla-nsa* 'on purpose' seems to carry an Adessive case ending and a possessive suffix, *verka-lle-en* 'slowly, leisurely' an Allative case ending and a possessive suffix, and *näi-n* 'in this way' an instructive case ending. However, because particles have lost most of their nominal or verbal properties, lack most other inflectional forms and have "particle-like" meanings, they are usually taken to form a class of their own. Syntactically and semantically, Finnish particles consist of different types of adverbs, adpositions, conjunctions and interjections. Of these, only adverbs and adpositions are of relevance to our purposes:[15]

(36) a. *kauniisti* 'beautifully'; *heti* 'right away'; *tahallaan* 'on purpose' ...
b. *ilman kuria* 'without discipline'; *kurin kanssa* 'with discipline' ...
c. *ja* 'and'; *jos'* if'; *koska* 'because'; *siten että* 'in such a way that'
d. *Ohoh!* 'Oops'; *Hui!* 'Yikes'; *Haa! ; ...*

After this introduction to the morphological properties of Finnish nominals, verbs and particles, I move on to look at Finnish word order in Section 1.3.

## 1.3. Word Order

Finnish is a language with relatively free word order. In sentences consisting of a subject, verb and a direct object or a manner adverbial, all the word order permutations given in [37a-f] and [38a-f] are possible. However, only [37a] and [38a] have neutral, syntactically unmarked word order whereas [37b-f] and [38b-f] have syntactically marked word order, in the sense that one of the constituents is interpreted as receiving extra focus - the English equivalents of these syntactically marked sentences are given in brackets. The fact that only [37a] and [38] have neutral, syntactically unmarked word order suggests that the unmarked linear ordering in Finnish is typically SVO or SVA:[16]

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[15] For more discussion on Finnish particles, see Setälä (1952, 125ff.), Laaksonen & Lieko (1992, 53ff.), Hakulinen & Karlsson (1979, 83ff.) and Vilkuna (1996, 42ff.).

[16] For the idea that the neutral, syntactically unmarked word order in Finnish is typically SVO, SVA or, if the sentence also contains a direct object, SVOA, see also Hakulinen (1946, 179ff.), Setälä (1952, 138ff.), Hakulinen & Karlsson (1979, 301ff.), Vilkuna (1989; 1995; 1996, 32ff.) and Huumo (1997).

(37) a. *Sirkku söi suklaa-ta.* SVO
Sirkku-Nom eat-past-3sg chocolate-Part
'Sirkku ate chocolate

b. *Sirkku suklaata söi.* SOV
'Sirkku chocolate ate'
('It was SIRKKU who ate chocolate')

c. *Söi Sirkku suklaata.* VSO
'Ate Sirkku chocolate'
('Sirkku DID eat chocolate')

d. *?Söi suklaata Sirkku.* VOS
'Ate chocolate Sirkku'
('It was Sirkku who DID eat chocolate')

e. *Suklaata Sirkku söi.* OSV
'Chocolate Sirkku are'
('It was CHOCOLATE that Sirkku ate')

f. *Suklaata söi Sirkku.* OVS
'Chocolate ate Sirkku'
('It was SIRKKU who ate chocolate')

(38) a. *Sirkku käyttäyty-i huonosti.* SVA
Sirkku-Nom behave-past-3sg badly
'Sirkku behaved badly'

b. *Sirkku huonosti käyttäytyi.* SAV
'Sirkku badly behaved'
('It was SIRKKU who behaved badly')

c. *Käyttäytyi Sirkku huonosti .* VSA
'Behaved Sirkku badly'
('Sirkku DID behave badly')

d. *?Käyttäytyi huonosti Sirkku.* VAS
'Behaved badly Sirkku'
('It was Sirkku who DID behave badly')

e. *Huonosti Sirkku käyttäytyi.* ASV
Badly behaved Sirkku'
('It was BADLY that Sirkku behaved')

f. *Huonosti käyttäytyi Sirkku.* AVS
'Badly behaved Sirkku'
('It was SIRKKU who behaved badly')

The focus structure of the sentence can be determined by using a question/answer test - Hakulinen & Karlsson (1979, 301ff.), Vilkuna (1989), Belletti & Shlonsky (1995) and Zubizarreta (1998) propose that only sentences which have neutral, syntactically unmarked word order can serve as answers to a question like *Mitä*

*tapahtui?* 'What happened':

**Q:** ***Mitä tapahtui?***
'What happened'

(39) a. *Sirkku söi suklaata.*
'Sirkku ate chocolate

b. **Sirkku suklaata söi.*
'Sirkku chocolate ate'

c. **Söi Sirkku suklaata.*
'Ate Sirkku chocolate'

d. **Söi suklaata Sirkku.*
'Ate chocolate Sirkku'

e. **Suklaata Sirkku söi.*
'Chocolate Sirkku ate'

f. **Suklaata söi Sirkku.*
'Chocolate ate Sirkku'

(40) a. *Sirkku käyttäyty-i huonosti.*
'Sirkku behaved badly'

b. **Sirkku huonosti käyttäytyi.*
'Sirkku badly behaved'

c. **Käyttäytyi Sirkku huonosti .*
'Behaved Sirkku badly'

d. **Käyttäytyi huonosti Sirkku.*
'Behaved badly Sirkku'

e. **Huonosti Sirkku käyttäytyi.*
Badly behaved Sirkku'

f. **Huonosti käyttäytyi Sirkku.*
'Badly behaved Sirkku'

According to Vilkuna (1989, 9) and (1995) Finnish word order is free only in the sense that it is discourse conditioned. This means that, although the linear ordering of words is free, it must be compatible with the accentuation pattern of the sentence. This, Vilkuna argues, is because accentuation patterns impose discourse interpretations on sentences. In [41] and [42], the capital letters indicate which constituents are marked, by means of accentuation, as receiving extra focus. [41b-c] are ungrammatical because the linear ordering of words is not compatible with the accentuation (ie the linear ordering of words and accentuation mark a different constituent as receiving extra focus). If we use the question/answer test to determine the focus structure of the

sentence, we see that only [41a] can serve as a response to the question *What happened?* whereas [41b-c], even though the linear ordering of words is exactly the same, cannot:

| | | |
|---|---|---|
| (41) a. | *Sirkku käyttäytyi hyvin.*<br>'Sirkku behaved well' | What happened? |
| b. | *SIRKKU käyttäytyi hyvin.*<br>'SIRKKU behaved well' | *What happened?<br>Who behaved well? |
| c. | *Sirkku käyttäytyi HYVIN.*<br>'Sirkku behaved WELL' | *What happened?<br>How did Sirkku behave? |
| (42) a. | *Hyvin käyttäytyi SIRKKU.*<br>'Well behaved SIRKKU' | Who was it that behaved well? |
| b. | **HYVIN käyttäytyi Sirkku.*<br>'WELL behaved Sirkku' | **???** |
| c. | *Käyttäytyi Sirkku HYVIN.<br>'Behaved Sirkku WELL' | **???** |

In the present thesis, I focus on sentences which have neutral, syntactically unmarked word order. In other words I focus on sentences which have linear SVO, SVA, or SVOA word order so that the manner adverbials follow the lexical verb or, if the sentence also contains a direct object, the direct object. In line with Hakulinen & Karlsson (1979), Vilkuna (1989; 1995; 1996) and Huumo (1997) I assume that all other sentences have syntactically marked word order, in the sense that (at least) one of the constituents is interpreted as receiving extra focus of some kind.

## 1.4. Configurationality

Although Finnish being configurational is a matter of some debate, I am adopting the view held in van Steenbergen (1989; 1991), Vilkuna (1989, 19ff.; 1995; 1996, 36f.) and Nelson (1995), among others, that Finnish is a configurational language in its syntax. Finnish being configurational and having a VP (essentially, configurational languages have a VP) is supported by the fact that Finnish passes such well-known configurationality tests as sentence fragments (see [43a-b]), coordination ([44a-b]), shared constituent coordination ([45a-b]) and ellipsis ([46a-b]); for a more detailed discussion of these tests, see eg Radford (1988, 90):

(43) a. *Mitä Sirkku tekee? Syö suklaata.*
'What does Sirkku do? Eats chocolate'

b. *Mitä Sirkku haluaa tehdä? Syödä suklaata.*
'What does Sirkku want to do? To eat chocolate'

(44) a. *Tytöt söivät ja joivat vatsansa täyteen.*
'The girls ate and drank their stomachs full'

b. *Minä haluan syödä ja juoda itseni pöydän alle.*
'I want to eat and drink myself under the table'

(45) a. *Sirkku, mutta ei Pulmu, rakastaa Kevin Costneria tulisesti.*
'Sirkku, but not Pulmu, loves Kevin Costner passionately'

b. *Sirkku haluaa, mutta Pulmu ei halua, mennä illalla ulos juhlimaan.*
'Sirkku wants, but Pulmu does not want, to go out tonight and party'

(46) a. *Sirkku tulisi jos voisi mutta Pulmu ei ~~tulisi jos voisi~~.*
'Sirkku would come if she could but Pulmu would not ~~come if she could~~'

b. *Sirkku ei ole maistanut papaijaa mutta Pulmu on ~~maistanut papaijaa~~.*
'Sirkku has not tasted paw paw but Pulmu has ~~tasted paw paw~~'

The behaviour of Finnish finite and non-finite VPs with regard to these tests can best be explained if the Finnish VP is a constituent: the configurational approach illustrated in Diagram (1.1) explains, for example, why the correct answer to a question such as *Mitä Sirkku tekee?* is usually *Syö suklaata* rather than something else:

Diagram (1.1)

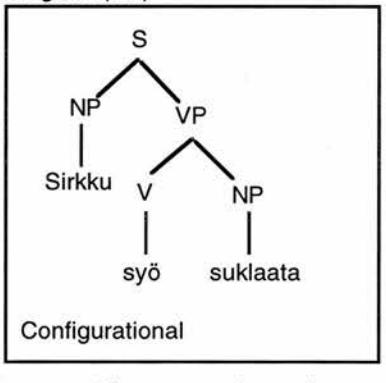
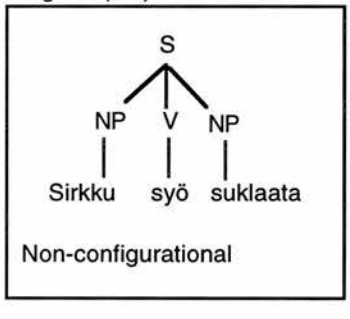



Diagram (1.2)




There are also other ways to show that Finnish is configurational, rather than non-configurational, in its syntax. The subject-object asymmetries illustrated in [47] and [48] can best be explained if the subject occupies a structurally higher position than the object - as it does in Diagram (1.1) but not in Diagram (1.2):[17]

[17] Van Steenbergen (1989, 149ff.) also discusses how weak crossover phenomena and long Wh-movement point towards Finnish being configurational, rather than non-configurational, in its syntax.

(47) a. *Sirkku$_i$ rakastaa itseään$_i$.*
'Sirkku$_i$ loves herself$_i$'

b. *Hän$_i$ rakastaa itseään$_i$.*
'She$_i$ loves herself$_i$'

c. **Itsensä$_i$ rakastaa Sirkkua$_i$.*
'Herself$_i$ loves Sirkku$_i$'

(48) a. *Tuskin kukaan rakastaa ketään.*
'Hardly anyone loves anybody'

b. **Kukaan rakastaa tuskin ketään.*
'Anyone loves hardly anybody'

Reflexive pronouns such as *itse* 'herself' must be bound by an antecedent. [47a-b] are grammatical because the subject *Sirkku* is able to bind the reflexive *itse*, by virtue of appearing in a higher structural position so that it is able to c-command *itse* (briefly, X c-commands Y iff X does not dominate Y and Y does not dominate X and the first branching node dominating X also dominates Y; I will return to the notion of c-command throughout the thesis). But [47c] is ungrammatical because nothing is able to bind *itse*. *Sirkku* cannot bind it because, being the direct object, it is too low down in the structure to c-command it: the first branching node dominating *Sirkku* does not dominate *itse*. In [48], the negative polarity items *kukaan* and *ketään* must be bound by a negative element. In [48a], the negative element *tuskin* 'hardly' appears inside the subject so it is able to bind them. But in [48b], the negative element *tuskin* 'hardly' appears inside the direct object: the sentence is ungrammatical because nothing is able to c-command and bind the negative polarity item *kukaan* inside the subject.

## 1.5. Organization of the Thesis

The discussion in the following chapters is organized as follows: in Chapter Two, I introduce the theoretical framework of the thesis which is the minimalist program of Chomsky (1989; 1993; 1994; 1995) and related work. I also discuss some previous analyses of Finnish sentences which are of relevance, including Mitchell (1992), Holmberg et al (1993), and Nelson (1995). In Chapter Three, I look at the treatment of adverbials within Kayne's Linear Correspondence Axiom (LCA) and Chomsky's bare phrase structure. I also discuss the feature based theories of adverbials proposed in

Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997). In Chapter Four, I look at the internal structure of Finnish manner adverbials. I propose, firstly, a system of structural and lexical case which allows us to analyse adverbs and the other categories uniformly as KPs, that is, as nominal items which inflect and carry a feature for lexical case. In Chapter Five, I propose a system of phrase structure which is based on semantic feature checking at the point of merge, and investigate if there is a direct correspondence between hierarchical structure and linear order. The discussion in Chapter Five will serve as a basis for the study of manner adverbials in Chapter Six; I argue that manner adverbials are merged as unique specifiers of Manner-related vPs, under semantic feature checking. I show that this Spec/vP is lower down in the structure than Spec/AgrOP, before moving on to discuss the relation between Finnish manner, place and time adverbials. In Chapter Seven, I look at the behaviour of Finnish manner, place and time adverbials in sentences containing episodic, habitual and quality predicates - although this chapter is more experimental in nature than the preceding chapters, the main aim is to develop a feature-based analysis of Finnish sentences containing episodic, habitual and quality predicates. In Chapter Eight, I summarise the main results.

# Chapter Two

# The Minimalist Framework and the Structure of Finnish Sentences

In this chapter, I introduce parts of the minimalist framework which are relevant for the study of manner adverbials and the structure of Finnish sentences. Firstly I look at some core ideas of the minimalist program in Section 2.1. I then discuss the functional structure of Finnish sentences in Section 2.2. The discussion in this section is largely based on, and consistent with, the systems proposed in Mitchell (1992), Holmberg et al (1993), and Nelson (1995).

## 2.1. The Minimalist Framework

### 2.1.1. A General Outlook

The theory of syntax proposed in Chomsky (1989; 1993; 1994; 1995) and related work consists of a lexicon, a computational system, a PF (an articulatory-perceptual) and an LF (a conceptual-intentional) interface.[1] The lexicon determines which lexical items enter into the computational system. The lexicon also specifies the lexical items for their phonological, semantic and formal features insofar as these are unpredictable from the other properties of the lexical entry. Phonological features are relevant for interpretation at the PF interface level, semantic features at the LF interface level. Among the formal features, Chomsky (1995, 277) makes the following distinctions:

---

[1] Other levels have also been proposed: for example, Zubizarreta (1998, 4; 29ff.) argues that the "focus structure of a sentence S should be captured in terms of a more abstract representation derived from LF via some interpretative mechanisms." She then refers to this representation as the *Assertion Structure* of S.

(**A**) Categorial features
(**B**) ϕ-features
(**C**) Case features
(**D**) Strong F, where F is categorial

Formal features can be either intrinsic or optional. The former, Chomsky (1995, 231ff.; 277f.) argues, are listed separately in the lexical entry for the linguistic item or are determined by properties so listed. The latter include features such as [±Plural]; they are added, for each occurrence of the linguistic item, when it enters into the numeration. The numeration is a multiset of pairs (LI, i) so that LI is the lexical item and i its index specifying how many times LI must be used in the derivation. The derivation converges when all the lexical items have been used up from the numeration, and all the indices have been reduced to zero.

The computational system of language takes derivations to PF and LF interface levels, by selecting lexical items from the numeration and generating derivations, in a manner specified by the computational and economy principles of Universal Grammar. The computational principles of UG constrain structure building operations such as Merge and Move while the economy principles ensure that the derivations formed by the structure building operations are both convergent and optimal. Derivations yield pairs of representations ($\pi$, $\lambda$) where $\pi$ is the PF representation interpreted at the articulatory-perceptual level, and $\lambda$ is the LF representation interpreted at the conceptual-intentional level. At some point, an operation called Spell-out splits the derivation into two parts: one of them contains elements which are relevant only to $\pi$ while the other one contains elements which are relevant only to $\lambda$. The derivation converges if both $\pi$ and $\lambda$ satisfy the Principle of Full Interpretation at the relevant interface levels, and crashes if they do not. In order to satisfy the Principle of Full Interpretation, $\pi$ and $\lambda$ must consist of legitimate objects. This means that neither PF nor LF must contain any indication of features which are uninterpretable at those levels.

Convergent derivations must be *optimal*, satisfying certain natural economy conditions. Optimality is defined in terms of length of derivation, number and length of steps taken, and Procrastinate: convergent derivations must have as little movement as possible, the distance of movement must be kept as short as possible, and movement must take place as late in the derivation as possible. Overt pre-Spell-out operations are more costly and produce a less economical derivation than covert post-Spell-out operations. In [1] and [2] below, the overt movement of *kuka/what* to Spec/CP is shorter than the overt movement of *mitä/what* to the same position. Hence, although

convergent, the derivations in [1b] and [2b] are blocked by the more economical derivations in [1a] and [2a]:

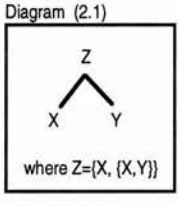
(1) a. *Kuka teki mitä?*
b. **Mitä kuka teki?*

(2) a. *Who did what?*
b. **What did who do?*

## 2.1.2. Bare Phrase Structure

The computational system of language takes derivations to the PF and LF interface levels, by selecting lexical items from the numeration and generating derivations, in a manner specified by the computational and economy principles of UG. The syntactic component of the computational system of language is a series of structure building operations. The most elementary of these is Merge: it selects two syntactic items, X and Y, from the numeration, reduces their indexes by one and combines them together to form a new syntactic item Z. Merge is a binary and an asymmetrical operation in that only one of the selected items, X or Y, may project and be the head of the new syntactic item Z. If X projects, a merger of X and Y produces a projection of X. The label Z of the new syntactic item is Z = {X {X, Y}}:

Diagram (2.1)




Structures such as (2.1) can be illustrated by the following concrete examples. In Diagram (2.2) the determiner *the* is the projecting head: hence the label Z of the new syntactic item is Z = {the {the, cheese souffle}}. In Diagram (2.3) the verb *eat* projects, and the label Z of the new syntactic item is Z = {eat {eat, meatballs}}:

Diagram (2.2)

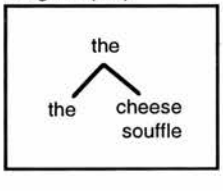
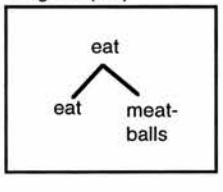


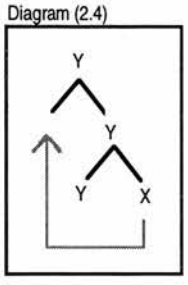

Diagram (2.3)




The operation Merge can only apply to syntactic items which are two separate phrase markers. The operation Move, on the other hand, can apply to syntactic items

which are in a single phrase marker. More specifically, the operation Move can select an item X and target Y, raising X to Y, in a manner illustrated (in a simplified way) in Diagram (2.4):

Diagram (2.4)

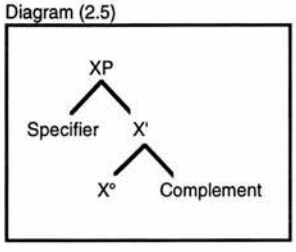



If we are dealing with substitution-type movement, raising X to Y yields a syntactic category which is different from the target of movement Y. But if we are dealing with adjunction-type movement, raising X to Y yields a two-segment category which is constructed from, and is essentially similar to, the target of movement Y. In bare phrase structure, adjunction-type movement is restricted to lexical and to phrasal adjunction: an $X^0$ can only be adjoined to a $Y^0$ and an XP can only be adjoined to a YP (ie heads can only be adjoined to heads, and maximal projections can only be adjoined to maximal projections). Movement forms a chain CH=(X, t) where X is the syntactic item and t is its trace. According to Chomsky (1995, 250ff.) chains must meet several conditions, including c-command, uniformity and Last Resort. The c-command condition requires that X (ie the moved syntactic item) must c-command t (its trace). The uniformity condition expresses the idea that X and t must be uniform with regard to their phrase structure status. The Last Resort condition states that movement must be driven by feature checking, a morphological property.

While Merge selects two syntactic items, X and Y, and combines them to form a new syntactic item Z, Move raises a syntactic item X from inside a structure already containing X, forming a chain CH= (X, t) where X is the syntactic item and t is its trace and X c-commands t. Elements merging with a minimal X are called *complements of X*. The output of this merger is an intermediate projection X' or, in cases where X does not project any further, a maximal projection XP. Elements merging with a non-minimal X are called *specifiers of X*. The output of this merger is typically a maximal projection XP. Chomsky (1995, 245) argues that the term head (or, $X^0$ head) refers to terminal elements (to linguistic items LI which are selected from the numeration) while the terms complement and specifier (of X) are defined as relations to a head X. Chomsky (1995, 242) further argues that, although the concepts minimal and maximal projection are available to the computational system of language, there exist no such entities in the structures that it forms. But he continues to use the terms minimal and maximal

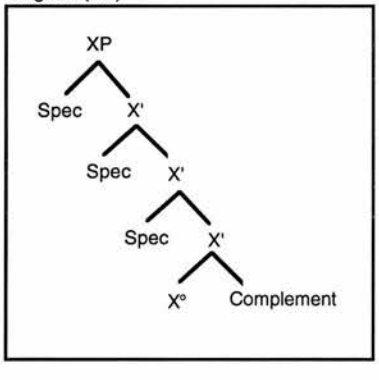
projection for convenience; I will follow in his footsteps and assume that minimal projections are categories which are not projections at all whereas maximal projections are categories which do not project any further. Minimal projections of X will be labelled X or $X^0$ whereas maximal projections of X will be labelled XP. All other projections of X will be treated as intermediate projections; they will be labelled X' (X-bar). Given these assumptions, we get the following types of structures:[2]

Diagram (2.5)




In bare phrase structure, complements are sisters to an $X^0$ and Merge is a binary operation. This means that each $X^0$ can have only one complement. Because specifiers are sisters to an X' or to an XP and no further conditions are stipulated, multiple specifiers and specifier positions are permitted in principle. Systems with multiple specifier positions are developed in Chomsky (1993; 1994, 1995), Koizumi (1995), Laenzlinger (1996), Ura (1996), Collins (1997) and Kitahara (1997), among many others:[3]

Diagram (2.6)




Kayne (1994), Alexiadou (1997), and Cinque (1997) argue for quite the opposite view

[2] Specifiers could also merge with an XP – I will return to this in Chapter Three. Note also that in the bare theory, specifiers can only branch to the left.

[3] Some earlier generative theories of phrase structure distinguished between specifiers and X' adjuncts: in addition to permitting *one* specifier as a daugher of XP, they also allowed recursive base adjunction of maximal projections to X', as both sisters and daughters of X'. However, in the bare theory there is no difference in structural configuration between specifiers and X' adjuncts: both bear the same structural relation to the $X^0$ head.

so that that each $X^0$ can have one and only one specifier position. I will return to this in Chapter Three.

## 2.1.3. Functional Categories

Lexical categories consist of elements which have a descriptive content - nouns, adjectives, and lexical verbs - while functional categories often consist of elements which have a purely grammatical function, auxiliary verbs and grammatical morphemes such as Tense and Mood being a case in point.

The distinction between lexical and functional categories was first suggested in Stowell (1981) and adopted in the Government and Binding theory of Chomsky (1986a) and related work. Extending the X'-theory to incorporate projections of I(nflection) and C(omplementizer) heads, Chomsky (1986a, 3f.) argues that sentences have the following base generated structure:

$[_{CP}$ Spec $[_{C'}$ C $[_{IP}$ **Subject** $[_{I'}$ I $[_{VP}$ Spec $[_{V'}$ V **Object** ]]]]]]

The first of the two major revisions to the GB theory of Chomsky (1986a) is the VP-internal subjects hypothesis proposed in Fukui & Speas (1986), Sportiche (1988) and Koopman & Sportiche (1991), among many others. According to this hypothesis, the subject of the sentence is base generated in Spec/VP and moves, in languages where no case is available (ie where no case is assigned) in the Spec/VP position, to Spec/IP, in order to receive Nominative case from $I^0$:

$[_{CP}$ Spec $[_{C'}$ C $[_{IP}$ **Subject**$_i$ $[_{I'}$ I $[_{VP}$ **t**$_i$ $[_{V'}$ V **Object** ]]]]]]

The second major revision to GB theory is the Split-Infl hypothesis of Pollock (1989). Pollock proposes that the Tense and Agreement features located under $I^0$ be treated as independent functional categories heading a T(ense)P and Agr(eement)P, respectively. He further proposes that negation, whenever present, is a functional $Neg^0$ projecting to a full maximal projection NegP. In Pollock's system, English sentences have the following base generated structure:[4]

[4] Neg/Negation is treated as an independent functional head also in Ouhalla (1991, 59ff.), Holmberg et al (1993), Holmberg & Nikanne (1994) and Cinque (1997). There are also alternative analyses which treat Neg as an operator and therefore as a specifier of a functional projection.

$[_{TP}\ [_{T'}\ T\ [_{NegP}\ [_{Neg'}\ Neg\ [_{AgrP}\ [_{Agr'}\ Agr\ [_{VP}$ **Subject** $[_{V'}\ V$ **Object** $]]]]]]]$

Within the bare theory, Chomsky (1995, 240) proposes, the postulation of functional categories must "be justified, either by output conditions (phonetic and semantic interpretation) or by theory internal arguments." He further proposes that functional categories such as T(ense) and D(eterminer) are justified by output conditions: T is associated with interpretable features such as [±Finite] and D with interpretable features such as [±Referential] which provide instructions about their own interpretation at the relevant interface level(s). But functional categories such as Agr(eement) and light v are only associated with uninterpretable features: this means that their presence is dependent on some theory internal arguments. For example, if a lexical verb is thematically complex and assigns several thematic roles to arguments, then it may be necessary to establish a layered VP shell structure consisting of a lexical VP and one or more light vPs - under this view, a light v is seen as a verb which has no independent semantic content, serving only a purely grammatical function - I will discuss a different view on light vPs in Chapters Five and Six.

Unlike lexical heads, functional heads often have the form of phonologically and morphologically dependent affixes. According to Abney (1987, 64f.) and Ouhalla (1991, 9ff.), functional $F^0$ heads do not assign thematic roles to their specifiers or complements. In Ouhalla's system, functional $F^0$s are also typically associated with the following properties:

**(A)** C(ategorial)-selectional properties
**(B)** M(orphological)-selectional properties
**(C)** Grammatical features/properties

For example, the c-selectional properties of a functional $D^0$ determine that it selects an NP, rather than an Agent or Patient, as its specifier or complement. Its m-selectional properties determine its own morphological status (ie whether it is affixal or non-affixal). If the $D^0$ in question is affixal, its m-selectional properties also determine the types of elements that it can adjoin to. Functional $F^0$s also contain information, in the form of features, which plays a crucial role in determining grammatical relations and properties. These relations and properties give rise to Checking Theory, to be discussed in the next sub-section.

## 2.1.4. Checking Theory

In the preceding discussion, we have seen that lexical items are specified for phonological, semantic, and formal features when they emerge from the numeration. The derivation converges if it satisfies the Principle of Full Interpretation at the PF and LF interface levels: both $\pi$ and $\lambda$ must consist of legitimate objects, and they must not contain any indication of features which are uninterpretable at the relevant interface levels. Phonological features are uninterpretable at LF, semantic features at PF. Formal features are either interpretable or uninterpretable at LF: crucially, all uninterpretable formal features must be checked and eliminated by LF, for LF convergence.

The requirement that all uninterpretable formal features be checked and eliminated by LF gives rise to Checking Theory. Briefly, a syntactic item $\alpha$ can be inserted, by Merge or Move, into the checking domain of an $X^0$ head containing an uninterpretable feature [+F] iff the feature [+F] of $X^0$ enters into a checking relation with a feature [+F] of $\alpha$. In the bare theory, Chomsky (1995, 178f.; 299f.) argues, the domain of an X head is the set of nodes contained in Max(X), ie in the smallest maximal projection dominating X, which are distinct from and do not contain X. The complement domain of X is the complement of X and whatever it dominates. The remainder of the domain of X is called a residue of X; hence, the residue of X is the domain of X minus its complement and whatever it dominates. Crucially, the (minimal) residue of X is also its checking domain.

Diagrams (2.7) and (2.8) show that domains and checking domains are defined for both heads and chains CH: in Diagram (2.7), Max(X) is XP. The domain of X is $\{\alpha 2, \beta\}$ and whatever these categories dominate; the complement domain of X is $\{\beta\}$; the checking domain of X is $\{\alpha 2\}$. In Diagram (2.8) we are dealing with a chain CH=(X, t). Max(CH) is YP. The domain of CH is $\{\alpha 1, \alpha 2, \beta\}$ and whatever these categories dominate; the complement domain of CH is $\{\alpha 2, \beta\}$; the checking domain of CH is $\{\alpha 1\}$:

Diagram (2.7)

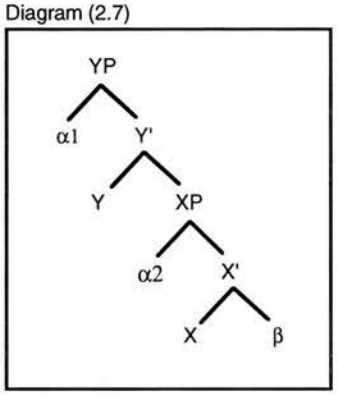
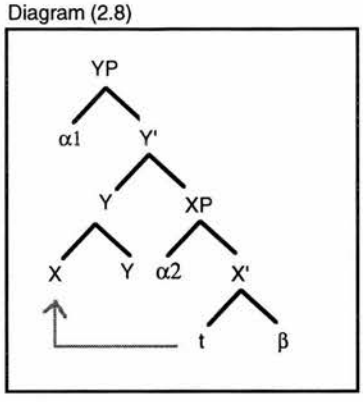



Diagram (2.8)




Chomsky (1995, 309) argues that in a checking configuration, a mismatch of features between X/CH and α2/α1 cancels the derivation: crucially, a feature [+F] of X/CH cannot enter into a checking relation with a feature [-F] of α2/α1:

Diagram (2.9)

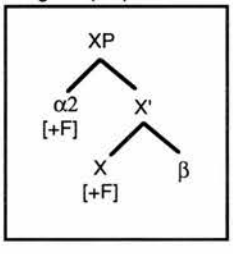
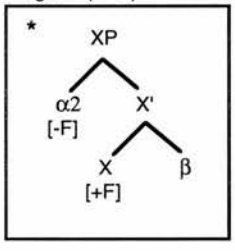


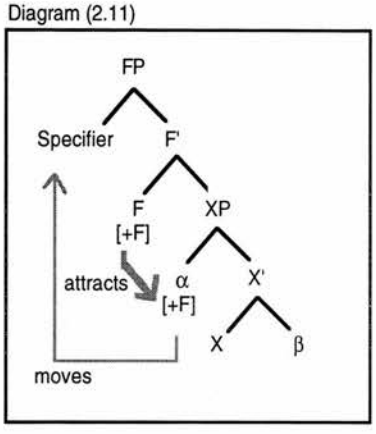

Diagram (2.10)




If an uninterpretable feature [+F] is also a *strong* feature, the checking relation must be established overtly, before the operation Spell-out. Strong features must be checked and eliminated prior to Spell-out because they are uninterpretable at PF, causing the derivation to crash at PF. Conversely, if an uninterpretable feature [+F] is a *weak* feature, the checking relation must be established covertly, after the operation Spell-out. Covert movement is feature movement, and it leaves the lexical item originally containing [+F] in situ.

Functional categories have a central role in Checking Theory. This is because they consist of features which give rise to feature checking and which either **(A)** allow a syntactic item α to be *merged* into their specifier position, or **(B)** drive *movement* of a syntactic item α to their specifier position. According to Chomsky (1995, 297ff.) functional $F^0$s can *attract* a feature [+F] contained in a syntactic item α. As a result, either α or its features must move so that they enter the checking domain of $F^0$. In the former case, we are dealing with overt movement, in the latter, with covert (ie feature) movement. The principle of procrastination requires that the application of Merge or Move and the checking (and possible elimination) of features take place as late in the derivation as possible:

Diagram (2.11)




Under the Mirror Principle of Baker (1985) the features of morphemes closer to the lexical stem are always checked first. This means that the corresponding functional projections must be lower down in the structure than the projections checking the features of morphemes further away from the lexical stem. If morphological derivations directly reflect syntactic derivations and vice versa, then functional projections must be hierarchically ordered according to the order of morphological affixes on the lexical $X^0$. However, within bare phrase structure the status of the Mirror Principle is unclear; this, Chomsky (1995, 195f.) argues, is because it is not reasonable to suppose that abstract features need to be ordered. In Potter (1996), the Mirror Principle is treated as an aspect of the PF interface - this allows languages to have identical syntactic derivations but to differ in the (overt) order in which morphological affixes attach to a lexical $X^0$.

## 2.2. The Functional Structure of Finnish Sentences

Within bare phrase structure, lexical items emerge from the numeration in their fully inflected forms. The inflectional affixes are associated with features which need checking before the derivation reaches the interface levels: all uninterpretable features must be checked by LF. Strong features must be checked and eliminated already by Spell-out; strong features are often associated with rich overt inflectional morphology, weak features with little or no overt inflectional morphology.

Under the Mirror Principle of Baker (1985) the linear order of morphological affixes directly reflects the hierarchical order of functional projections. This means that, if an affix α associated with a feature [+F] is closer to the lexical stem than an affix β associated with a feature [+Z], the projection of the functional head checking [+F] is

lower down in the structure than the projection of the functional head checking [+Z]. Assuming that each of the verbal morphological affixes discussed in Chapter One is associated with a feature [+F] which is, in turn, associated with a unique clausal functional head, Finnish finite verbs such as *laule-tt-i-in* 'sing-pass-past-pass.agr' and *laule-tta-isi-in* 'sing-pass-cond-pass.agr' provide evidence for the following types and order of clausal functional projections:[5]

$[_{AgrSP}\ [_{TenseP/MoodP}\ [_{VoiceP}\ [_{VP}\ \cdots\ ]]]]$

The lexical V is attracted by and raises overtly to the heads of Voice, Tense/Mood and Agr(eement)S(ubject), for feature checking. In line with Mitchell (1992), Holmberg et al (1993), Holmberg & Nikanne (1994) and Vilkuna (1996) I assume, firstly, that Tense is a subcategory of Mood in Finnish - this view contrasts with the one presented in Cinque (1997) who argues that there exist various subcategories of Tense and Mood, each of which heads its own maximal projection XP. Secondly, much in line with Holmberg et al (1993) and Holmberg & Nikanne (1994), I assume that the movement of Finnish lexical verbs to the head of AgrS is driven by a need to check some kind of subject-verb agreement features; because only finite constructions involve subject-verb agreement in Finnish, Holmberg et al and Holmberg & Nikanne call the AgrSP projection an F(inite)P. They also assume that only finite constructions can have an FP in Finnish. Diagrams (2.12) and (2.13) show that, because head-to-head movement creates an adjunction structure, the syntactic item which raises from the head of Voice to Tense/Mood, and from Tense/Mood to AgrS, is no longer just the lexical $V^0$ but an adjunction structure containing the lexical $V^0$:

[5] Although in the previous section we have seen that the status of the Mirror Principle is unclear so that there is no direct correspondence between morphological and syntactic derivations, the systems developed in Mitchell (1992), Holmberg et al (1993) and Nelson (1995) are based on the assumption that there is. Since establishing the exact relation between morphological and syntactic derivations is not my main concern here, I will follow the practice established in these earlier studies.

Diagram (2.12)

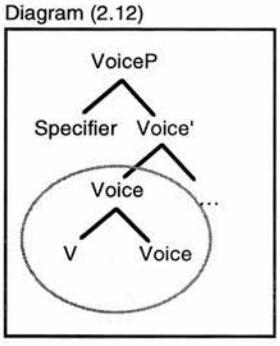
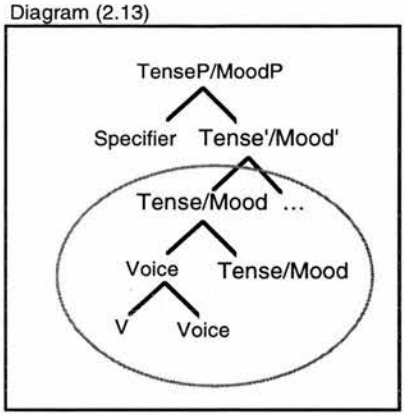



Diagram (2.13)




In Chapter One, we have seen that Finnish present and past perfect tenses are formed by means of the auxiliary *olla:*

(3) a. *Ole-n naura-nut.*
Be-pres-1sg laugh-2pcp
'I have laughed'

b. *Ol-i-n naura-nut.*
Be-past-1sg laugh-2pcp
'I had laughed'

c. *Ol-isi-n naura-nut.*
Be-cond-1sg laugh-2pcp
'I would have laughed'

The fact that*olla* inflects for subject-verb Agreement and for Tense/Mood indicates, firstly, that it is a head: only heads can undergo movement from one head position to another. Secondly, the projection of *olla* must be lower down in the structure than the Tense/Mood projection: otherwise *olla* would not be able to raise to the head of Tense/Mood, for feature checking. Note that the presence of the auxiliary *olla* prevents the lexical V from raising higher than the head of Participial (Pcp); the fact that Finnish participials can still inflect for Voice shows that PcpP is located between AuxP and VoiceP:

$[_{AgSrP}\ [_{TenseP/MoodP}\ [_{AuxP}\ [_{PcpP}\ [_{VoiceP}\ [_{VP}\ \cdots\ ]]]]]]$

However, the status of Aux heads such as the Finnish *olla* is slightly problematic. On the one hand, they could be functional $F^0$s which have a lexical realisation. On the other hand, they could be lexical $V^0$ heads which take functional projections such as PcpPs as their complements. In this thesis, I propose an analysis of *olla* as a $V^0$ head, rather

than as a functional $F^0$ head: this is essentially because it allows us to generalise that Finnish AgrS and Tense/Mood heads have features which allow them to attract the closest $V^0$ head. In the simple tenses, the closest $V^0$ head is the lexical $V^0$ whereas in the complex tenses, it is *olla*. If, on the other hand, *olla* was analysed a functional $F^0$ head, we would be forced to conclude that in the simple tenses, Finnish AgrS and Tense/Mood heads have features which allow them to attract and drive the movement of a lexical $V^0$ whereas in the complex tenses, they have features which allow them to attract and drive the movement of a functional $F^0$. Summarising, I assume that in the simple and complex tenses, we are dealing with the following types of structures:

Diagram (2.14)

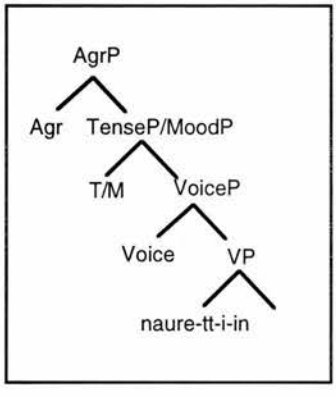
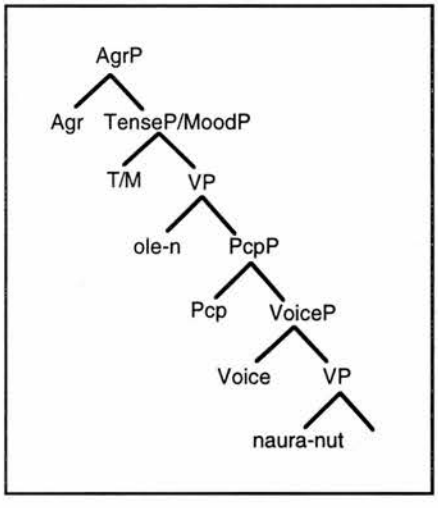



Diagram (2.15)




In the light of the preceding discussion, I propose that the Finnish negative element *ei* should also be analysed as a $V^0$ head. Given the assumption that functional AgrS heads attract and drive the movement of the closest $V^0$ to AgrS, this proposal allows us to conclude that in negative sentences, the closest $V^0$ is always *ei*. When *ei* inflects for subject-verb Agreement, a lexical $V^0$ or *olla* inflects for Tense/Mood. This suggests that the maximal projection of *ei* is situated between AgrSP and TenseP/MoodP:[6]

[6] Mitchell (1992, 355f.) arrives at the same conclusion, by observing that the Finnish *ei* is able to move freely from its base position to the heads of Agr and C, to produce forms such as *ettei* 'that+not' from the complementizer *että* and *ei*. Recall that I assume, in keeping with Holmberg et al (1993), Holmberg & Nikanne (1994) and Vilkuna (1996), that the lexical V *nauranut* only seemingly carries the same morpheme *-nut* in [4b] and in [5a-c]. In [4b] *-nut* is a past tense morpheme, and it is associated with both Tense and Mood features. In [5a-c], *-nut* is a past participial morpheme: it is associated with Tense, but not with Mood, features.

(4) a. *E-n naura*
Not-1sg laugh-pres
'I do not laugh'

b. *E-n naura-nut.*
Not-1sg laugh-past
'I did not laugh'

c. *E-n naura-isi.*
Not-1sg laugh-cond
'I would not laugh'

(5) a. *E-n ole naura-nut.*
Not-1sg be-pres laugh-2pcp
'I have not laughed'

b. *E-n ol-lut naura-nut.*
Not-1sg be-past laugh-2pcp
'I had not laughed'

c. *E-n ol-isi naura-nut.*
Not-1sg be-cond laugh-2pcp
'I would not have laughed'

Summarising the discussion so far, we have arrived at the following set of functional projections in the Finnish clausal domain:

| | |
|---|---|
| **AgrSP:** | a functional projection associated with subject-verb agreement features and/or with finiteness features |
| **NegP:** | a VP projection associated with *ei* |
| **TenseP/ MoodP:** | a functional projection associated with tense and mood features |
| **AuxP:** | a VP projection associated with *olla* |
| **PcpP:** | a functional projection associated with participial and tense features |
| **VoiceP:** | a functional projection associated with voice features |
| **VP:** | a projection of the lexical V |

But these functional projections may not be enough. In languages such as Greek, aspectual distinctions such as imperfective vs perfective aspect are signalled by means of verbal inflectional morphology, and the features associated with aspectual verbal morphemes are checked by means of raising the lexical $V^0$ overtly to the head of an aspectual functional projection. The following data and glosses are from Alexiadou (1997, 86):

(6) a. *O Janis diavaze to vivlio.* *Greek*
the-John-Nom read-IMP:3sg the-book-Acc
'John was reading a book'

b. *O Janis diavase to vivlio.*
the-John-Nom read-PERF:3sg the-book-Acc
'John read a book'

Although Finnish does not distinguish between imperfective vs perfective aspect by means of (overt) verbal inflectional morphology, Nelson (1995), de Hoop (1996), Vainikka & Maling (1996), and Kiparsky (1998), among many others, have shown that it signals such distinctions by means of alternating the case of the direct object (ie the Accusative-Partitive alternation):

(7) a. *Jouni luk-i kirja-n.*
John-sg-Nom read-past-3sg book-sg-Acc
'John read a book (and finished it)'

b. *Jouni luk-i kirja-a.*
John-sg-Nom read-past-3sg book-sg-Part
'John was reading a book (but it's unclear if he finished it)'

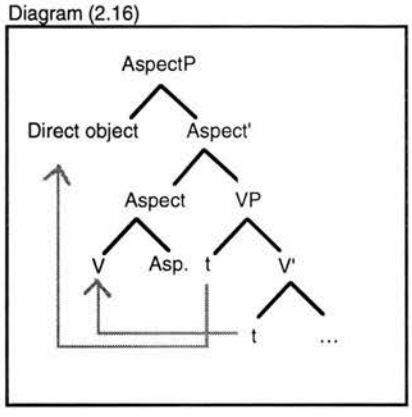
(8) a. *Lucky Luke ampu-i rosvo-t.*
Lucky Luke-sg-Nom shoot-past-3sg robber-pl-Acc
'Lucky Luke shot the robbers (and they died)'

b. *Lucky Luke ampu-i rosvo-j-a.*
Lucky Luke-Nom shoot-past-3sg robber-pl-Part
'Lucky Luke shot the robbers (but they did not die)'

I take [7] and [8] to suggest that Finnish has an aspectual functional head checking the aspectual features of both the verb and its internal argument: in other words, Finnish verbs are associated with aspectual features which allow them to raise overtly to the head, while the internal arguments raise to the specifier, of an aspectual clausal functional projection. The adjunction structure containing the lexical verb then continues movement to the heads of Pcp, Tense/Mood, and AgrS, producing the correct linear ordering SVO. The fact that the internal argument (ie the direct object) follows both finite and participial verbs in Finnish suggests that the aspectual projection is situated lower down in the structure than PcpP. I assume, much in line with Vainikka & Maling (1996), that the aspectual feature which drives the movement of verbs and direct objects to AspectP is [±Completed]. This feature is a compromise between various aspectual features including irresultativity, unboundedness, atelicity, indefiniteness, and presupposition; a more detailed discussion of these features would take us outside the

topic of this thesis, however:

Diagram (2.16)




The presence of an AspectP which is involved in the checking of aspectual features on both the lexical V and the direct object is also discussed in Borer (1994) and Laka (1994). These authors observe that in languages like Hindi, only when the lexical V carries an overt inflectional affix for perfective aspect, the direct object is able to inflect for the Accusative case. Although Finnish lacks an overt inflectional affix for imperfective vs perfective aspect, I propose that it has a zero morpheme Ø which is associated with an aspectual feature [±Completed] and which requires the direct object to be associated with a matching aspectual feature. This matching aspectual feature is contained in an inflectional ending for the Accusative case. However, although the aspectual feature [±Completed] is contained in, or associated with, an inflectional ending for the Accusative case, I argue that it is *not* the same feature as what is referred to as the case feature. According to Chomsky (1993) and Koizumi (1995), direct objects check their case features universally in Spec/AgrO(bject)P. The case features, because they are uninterpretable, are deleted when checked - this is to prevent a lexical item α from entering into multiple case checking relations with a number of heads. If the aspectual feature [±Completed] was the same thing as the case feature, we would either have to allow α to enter into multiple case checking relations with a number of different heads or, alternatively, assume that both aspectual and case feature checking takes place in a functional Aspect or AgrO projection (ie the derivation contains either an AspectP or an AgrOP, and this single clausal functional projection is responsible for both case and aspectual feature checking).

Borer (1994) and Laka (1994) argue that AgrOP be replaced by AspectP so that both case and aspectual feature checking takes place in an aspectual functional projection. However, on the basis of Finnish, I hypothesize that both AgrOP and AspectP are needed because they are responsible for the checking of very different types of features which just happen to be associated with a single inflectional case

ending - I propose that the Finnish AgrOP is associated with a kind of "transitive" feature checking and with Nominative-Accusative case alternation on the internal argument of the verb, whereas the AspectP is responsible for aspectual feature checking and for Accusative-Partitive case alternation.[7] If the lexical V is transitive, as in [9a] below, it requires its internal argument to inflect and carry a feature for the Accusative case; if, however, it is intransitive, as in [9b-e], it requires its internal argument to inflect and carry a feature for the *Nominative* case. If the lexical V is intransitive and its internal argument inflects and carries a feature for Nominative case, then this internal argument can either remain in Spec/AgrOP (see [9c-d]), or continue movement to Spec/AgrSP (see [9e]). The fact that the internal argument can continue movement to Spec/AgrSP is not against the requirement that α must not enter into multiple case checking relations with a number of different heads - I assume that the Finnish AgrOP is associated with transitivity-related features while AgrSP is associated with subject-verb agreement features and with finiteness; this means that movement of internal arguments from Spec/AgrOP to Spec/AgrSP is driven by a need to check different types of features which just happen to be associated with a single inflectional case ending:[8]

(9) a. *Lucky Luke ampu-i rosvo-n.*
Lucky Luke-sg-Nom shoot-past-3sg robber-sg-Acc
'Lucky Luke shot a/the robber (and she died)'

b. *Ammu rosvo!*
Shoot-imp-2sg robber-sg-Nom
'Shoot a/the robber (so that she will die)'

c. *?Ammu-tt-i-in rosvo.*
Shoot-pass-past-pass.agr robber-sg-Nom
'Was shot a/the robber (and she died)'

d. *Saluuna-ssa ammu-tt-i-in rosvo.*
Saloon-sg-Iness shoot-pass-past-pass.agr robber-sg-Nom
'In the saloon, a robber was shot (and she died)'

e. *Rosvo ammu-tt-i-in.*
Robber-sg-Nom shoot-pass-past-pass.agr
'A robber was shot (and she died)'

---

[7] The idea that a special "transitivity-related" functional head checks the features of the internal argument is also put forward in Collins (1997).

[8] According to Collins & Thráinsson (1993; 1996) and McGinnis (1998), movement to the normal subject position could be driven by the EPP (ie by some kind of EPP features on the AgrS head). I will return to movement to subject position briefly in Chapter Five.

[10a-e] suggest that the transitivity-related feature which is associated with the Nominative-Accusative alternation on the internal argument of V exists and operates quite indepedently of the aspectual feature [±Completed]: the aspectual feature is responsible for turning the Nominative or Accusative case of the internal argument of V into a Partitive case:

(10) a. *Lucky Luke ampu-i rosvo-a.*
Lucky Luke-sg-Nom shoot-past-3sg robber-sg-Part
'Lucky Luke shot a/the robber (but she did not die)'

b. *Ammu rosvo-a!*
Shoot-imp-2sg robber-sg-Part
'Shoot a/the robber (so that she will not die)'

c. *?Ammu-tt-i-in rosvo-a.*
Shoot-pass-past-pass.agr robber-sg-Part
'Was shot a/the robber (but she did not die)'

d. *Saluuna-ssa ammu-tt-i-in rosvo-a.*
Saloon-sg-Iness shoot-pass-past-pass.agr robber-sg-Part
'In the saloon, a robber was shot (but she did not die)'

e. *Rosvo-a ammu-tt-i-in.*
Robber-sg-Part shoot-pass-past-pass.agr
'A robber was shot (but she did not die)'

Based on these brief considerations, I conclude that a single inflectional case ending can be associated with a number of different features which need checking in the appropriate functional projections; we have seen how nominal items inflecting and carrying a feature for Nominative, Accusative, and Partitive case are associated with some kind of transitivity-related, aspectual, and subject-verb agreement features which need checking in an AgrO, Aspect, and AgrS projection, respectively. When the transitivity-related feature has been checked and (possibly) eliminated, the other features are still there, driving movement of the nominal item to another functional projection. We arrive at the following types of functional projections in the Finnish clausal domain:

| | |
|---|---|
| **AgrSP:** | a functional projection associated with subject-verb agreement/finiteness features |
| **NegP:** | a VP projection associated with *ei* |
| **TenseP/ MoodP:** | a functional projection associated with tense and mood features |
| **AuxP:** | a VP projection associated with *olla* |

| | |
|---|---|
| **PcpP:** | a functional projection associated with participial and tense features |
| **VoiceP:** | a functional projection associated with voice features |
| **AspectP:** | a functional projection associated with aspectual features (eg [±Completed]) and Accusative-Partitive alternation |
| **AgrOP:** | a functional projection associated with "transitivity-related" features and Nominative-Accusative alternation |
| **VP:** | a projection of the lexical V |

Before closing off this chapter, let us consider briefly the following question: do all clausal functional projections have to be present in all sentences all the time? In the discussion so far, I have assumed only those functional projections that Finnish shows evidence for. Thus, because Finnish finite verbs always inflect and have a feature for subject-verb agreement and for Tense/Mood, I have assumed that all Finnish finite sentences have an AgrSP and a TenseP/MoodP; furthermore, I have assumed that a NegP is present only in negative sentences, and an AuxP is present only in sentences containing *olla*. Mitchell (1992) argues for the presence of a NegP in both positive and negative sentences. She relabels the NegP an Assertion Phrase and proposes that Finnish positive passive sentences give evidence for the presence of an AssertionP even in positive sentences: in *Talo-a maala-ta-an* 'House-Part paint-Pass-Pres-an ie The house is being painted', she treats *-an* as an assertion marker. However, under this line of reasoning, *ei* cannot be treated as a $V^0$ head, and the generalization that AgrS has a feature which attracts the closest $V^0$ head, creating forms such as *en, et* and so on, is lost.

However, even though Finnish may sometimes lack certain types of overt morphemes, it makes use of features which are associated with zero morphology and which need checking in an appropriate functional projection. At least the the aspectual feature [±Completed] and the transitivity-related feature [±Transitive] are associated with zero morphology on the lexical V. The active voice features could also be associated with zero morphology on the lexical V: if they are, the VoiceP must be present in both active and passive sentences. All in all, I am adopting the view that the clausal architecture is determined by UG in the sense that UG defines the set (and also the hierarchical order) of functional projections that languages choose from: thus, the fact that Greek and Hindi have an overt aspectual verbal morpheme does not automatically mean that Finnish must also has an AspectP. However, the lack of an overt aspectual verbal morpheme on the Finnish lexical V does not automatically mean that Finnish does not have an AspectP either.

## Chapter Three

# Adverbials and Functional Categories

In this chapter, I discuss some previous analyses of adverbials which are of relevance. In Section 3.1. I look at the treatment of adverbials under the pre-minimalist generative framework while in Section 3.2. I discuss the treatment of adverbials under the Linear Correspondence Axiom of Kayne (1994) and the bare phrase structure theory of Chomsky (1989; 1993; 1994; 1995). In Sections 3.3. through 3.5. I discuss the feature based theories of adverbials proposed in Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997).

## 3.1. Introduction

Within the generative framework, syntactic analyses of adverbials are based on three different perspectives. Firstly, modification based analyses treat adverbials as modifiers of verbs/VPs and of sentences. According to Aoun & Li (1993, 160), the semantic modification relation can be realised in syntactic configurations in the following way:[1]

> A modifies B in the context
> $[_C \ldots A \ldots B \ldots]$
> iff C immediately dominates A and B, C is a projection of B,
> and B is not a head.

The problem with these configurations is that they allow adverbials to enter the derivations in at least three different structural positions. They also allow adverbials to

[1] A similar view on modification and syntactic structure can be found in Zubizarreta (1987).

occur freely on the left and on the right:[2]

Diagram (3.1)

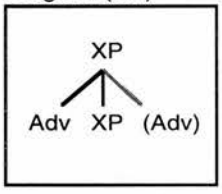



Diagram (3.2)

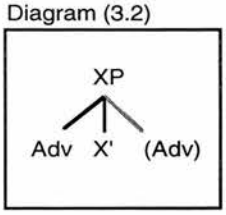
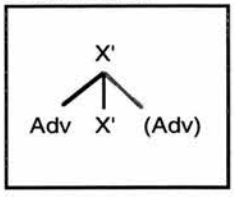



Diagram (3.3)



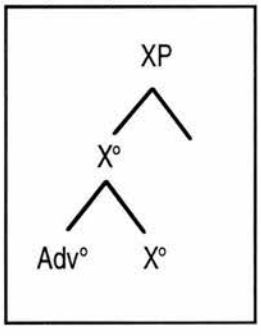

Predication-based analyses treat adverbials as predicates which must occur in relation with a subject. Different types of adverbials require different subjects: some require INFL subjects, others require Agent subjects, and so on. The examples in [1] from Roberts (1987, 69) are ungrammatical because *deliberately* and *intentionally* require Agent subjects - [1a] contains a Theme subject, [1b] an Experiencer subject:[3]

(1) a. **The ice deliberately melted.*
b. **John intentionally knew the answer.*

Just like the modification-based analyses, predication-based systems fail to determine the hierarchical positions of adverbials with any accuracy, in the sense that adverbials are allowed to enter the derivations in a number of structural positions.

Travis (1988) is among the first to propose an essentially feature based theory of adverbials. In her system, adverbials are licensed as $Adv^0$ heads, by the appropriate features on the licensing $X^0$ heads:

Diagram (3.4)




Travis (1988) argues that the following features on $X^0$ heads could license adverbials:

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[2] For discussion on the modification based theories of adverbials, see Aoun & Li (1991) and Stroik (1996).

[3] For more discussion about a predication based account of adverbials, see eg Roberts (1987, 69ff.). An essentially predication based account of Finnish adverbials is developed in Siro (1964).

**C:** Speaker [illocutionary force]
**INFL:** E[vent], AGR[eement]
**V:** [Manner]

But there are problems with Travis' system. The most serious of these is its inability to explain the licensing and distribution of non-Adv$^0$ adverbials (ie the licensing and distribution of AdvPs, DPs, AdjPs, PPs and so on). [2] contain examples of non-Adv$^0$ adverbials in Finnish: in [2a] the adverbial is modified, in [2b] it is a superlative form, in [2c] it is realised by a noun (a DP) and in [2d] it is realised by an adjective (an AdjP). Under Travis' assumptions, none of these adverbials can be accounted for:[4]

(2) a. *Sirkku saapu-i erittäin nopea-sti.*
Sirkku-Nom arrive-past-3sg very fast-Adv
'Sirkku arrived very fast'

b. *Sirkku saapu-i nope-i-ten.*
Sirkku-Nom arrive-past-3sg fast-superlative-adv
'Sirkku arrived the fastest'

c. *Sirkku saapu-i vauhdi-lla.*
Sirkku-Nom arrive-past-3sg speed-Adess
'Sirkku arrived with speed/ speedily/ fast'

d. *Mika Häkkinen kaasutt-i täysi-llä.*
Mika Häkkinen-Nom accelerate-past-3sg full-Adess
'Mika Häkkinen drove fast' (lit. accelerated in full)

Travis (1988, 283) argues that Adv$^0$ and non-Adv$^0$ adverbials, although they may play similar roles semantically, differ in their distribution and must therefore be distinguished syntactically. But in Chapter One, we have seen that Finnish Adv$^0$ and non-Adv$^0$ adverbials have more similarities than differences in their distribution. This suggests that, on distributional grounds, there is no basis for a syntactic distinction between them. The similarities in the distribution of Finnish Adv$^0$ and non-Adv$^0$ adverbials can also be observed from [3a-c] and [4a-c]:[5]

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[4] In keeping with Vainikka (1993) I assume that Finnish comparatives and superlatives are adjectives selecting a ComparativeP or a SuperlativeP as their specifier and projecting to a full maximal projection AdjP.

[5] When the adverbial is long, there is a tendency to place it in the sentence final position so that it does not move. But rather than syntactic reasons, this is due to phenomena such as focus and the principle of end weight. For discussion on focus and the principle of end weight in Finnish, see eg Vilkuna (1989; 1995).

(3) a. *Pulmu kohtel-i Sirkku-a lämpimä-sti.*
Pulmu-Nom treat-past-3sg Sirkku-Part warmly
'Pulmu treated Sirkku warmly'

b. *Pulmu kohteli lämpimästi Sirkkua.*
'Pulmu treated warmly Sirkku'
('It was Sirkku that Pulmu treated warmly')

c. *Lämpimästi Pulmu kohteli Sirkkua.*
'Warmly Pulmu treated Sirkku'
('It was warmly that Pulmu treated Sirkku')

(4) a. *Pulmu kohtel-i Sirkku-a lämmö-llä/ ilkeäl-lä taval-la.*
Pulmu-Nom treat-past-3sg Sirkku-Part warmth-Adess/ mean-Adess way-Adess
'Pulmu treated Sirkku with warmth/ in a mean way (meanly)'

b. *Pulmu kohteli lämmöllä/ ilkeällä tavalla Sirkkua.*
'Pulmu treated with warmth/ in a nasty way Sirkku'
('It was Sirkku that Pulmu treated with warmth/ in a nasty way')

d. *Lämmöllä/ ilkeällä tavalla Pulmu kohteli Sirkkua.*
'With warmth/ in a nasty way Pulmu treated Sirkku'
('It was with warmth/ in a nasty way that Pulmu treated Sirkku')

Secondly, in Travis' system, manner adverbials are base adjoined to a $V^0$ head. Because raising just one segment of a two-segment category is not permitted by the theory of phrase structure, the fact that verb movement to AgrS leaves the $Adv^0$ manner adverbials behind is a further problem for this analysis:

(5) a. $[_{AgrSP}$ Pulmu $[_{AgrS'}$ **kohteli$_i$** Pulmua $[_{VP}$ lämpimästi **t$_i$** ]]

b. $[_{AgrSP}$ Pulmu $[_{AgrS'}$ **kohteli$_i$** Pulmua $[_{VP}$ lämmöllä **t$_i$** ]]

Travis' idea that adverbials are licensed by features which are semantic in nature is developed further in Laenzlinger (1996; 1998), Alexiadou (1997; 1998) and Cinque (1997). Because these approaches adopt assumptions made within the Linear Correspondence Axiom of Kayne (1994) and the minimalist program of Chomsky (1993; 1994; 1995), I will discuss these first in Section 3.2.

# 3.2. Adverbials in the LCA and in Bare Phrase Structure

Kayne (1994) develops a highly restricted theory of phrase structure and linear word order: his aim is to ensure that each hierarchical position can be associated with one and only one linear position. He assumes that a linear ordering must always be transitive so that xLy & yLz → xLz; total so that all members of a set are linearly ordered; and antisymmetric so that xLy is incompatible with yLx. He proposes a Linear Correspondence Axiom (LCA) matching the notion of asymmetric c-command to the linear order of terminals:

> *Linear Correspondence Axiom*
> d(A) is a linear ordering of T.
> where A is a set of ordered pairs of nonterminals $\langle X_j, Y_j \rangle$ such that $X_j$ asymmetrically c-commands $Y_j$ and T is a set of terminals.

In Kayne (1994, 4) the relation of c-command is defined asymmetrically so that no two sister nodes can mutually c-command each other:[6]

> X asymmetrically c-commands Y iff X c-commands Y and Y does not c-command X.

Crucially, Kayne (1994, 33) relates asymmetric c-command to linear precedence:

> Let X, Y be nonterminals and x,y terminals such that X dominates x and Y dominates y. Then if X asymmetrically c-commands Y, x precedes y.

In order to see how the LCA works in practice, let us consider the following structures from Kayne (1994, 7f.):

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[6] Note that in "normal" c-command, X c-commands Y iff the first branching node dominating X also dominates Y. This allows X and Y to mutually c-command each other.

Diagram (3.5)

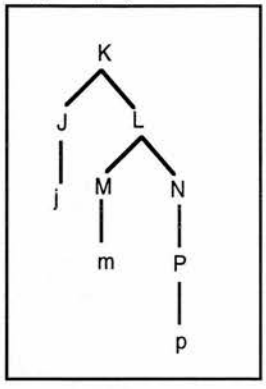
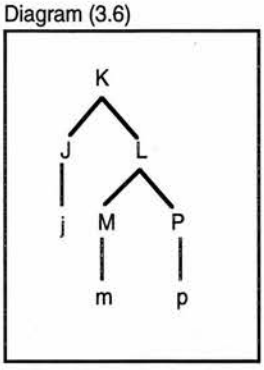


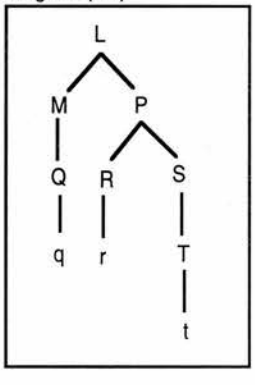

Diagram (3.6)




In Diagram (3.5) the set of ordered pairs of nonterminals for which asymmetric c-command holds is <J,M>, <J,N>, <J,P>, <M, P> and the d(A) is <j,m>, <j,p>, <m,p>. Thus the linear ordering of terminals is j-m-p. In Diagram (3.6) the set of pairs for which asymmetric c-command holds is <J,M>, <J,P> and the d(A) is <j,m> and <j,p>. But the structure is ill-formed: the order is not total because no relation is specified for the terminals m and p.

In order to allow for specifiers and adjoined phrases, Kayne (1994, 15ff.) makes use of the distinction between segments and categories. In Diagram (3.7) M and P cannot be maximal projections dominated by another node L. In such structures d(A) would violate the requirement for antisymmetry in that it would contain <q,r> and <r,q>, by virtue of M asymmetrically c-commanding R and P asymmetrically c-commanding Q:

Diagram (3.7)




In order to rescue the situation, Kayne (1994, 16) proposes that asymmetric c-command be restricted to categories:

> X c-commands Y iff *X and Y are categories* and X excludes Y and every category that dominates X also dominates Y

Under adjunction, M is a maximal projection, but L and P are two segments of a single

category. Because segments do not enter into c-command relations, P does not c-command Q and d(A) does not contain <r,q>. The structure is antisymmetric and compatible with the LCA.

Under the LCA, Kayne (1994, 23f.) argues, there can be no structural difference between specifiers and adjoined phrases: instead, specifiers *are* adjoined phrases. This means that under the LCA, adverbials can be either specifiers/adjoined phrases, or complements. Because adjunction of more than one nonhead to a nonhead always leads to a violation of antisymmetry, adverbials which are specifiers are necessarily the *unique* specifiers of their heads. The LCA only allows for left-branching specifiers since it is crucial that asymmetric c-command corresponds to linear precedence - the structure in (3.9) is ill-formed because the adverbial asymmetrically c-commands the head and the complement but follows rather than precedes them in linear order:[7]

Diagram (3.8)

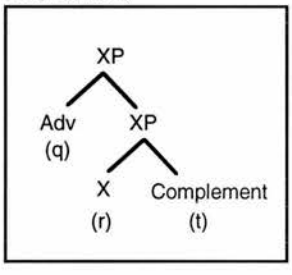
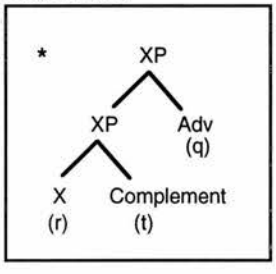


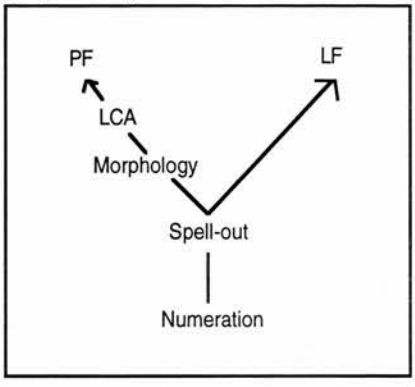

Diagram (3.9)




Chomsky (1994; 1995) adopts a version of the LCA. Although his version differs crucially from the one proposed in Kayne, the idea of asymmetric c-command corresponding to linear precedence is still central. According to Chomsky (1995, 334ff.), the LCA is an essential part of the phonological component so that it applies after Morphology while in Kayne (1994), the LCA must be respected at all levels, including LF. We can describe Chomsky's version of the LCA in the following way:

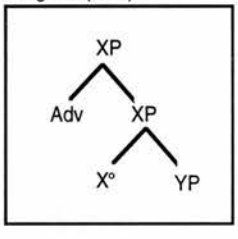
[7] Laenzlinger (1996) proposes that the LCA be relaxed so that <x,y> can be read as either "x precedes y" or "x follows y." In will discuss Laenzlinger's proposal in Section 3.5.

[Diagram 3.10)




Unlike in Kayne (1994), in the minimalist framework of Chomsky (1993; 1994; 1995) adverbials which are specifiers/adjoined phrases are allowed to appear in two different structural configurations. Firstly, they are allowed to adjoin to an XP to form a two-segment category [XP, XP]:

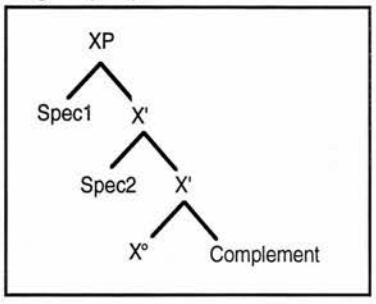
Diagram (3.11)




Although XP-adjunction structures can typically be formed by means of either Merge or Move, Chomsky (1995, 329) argues that Move is ruled out here in principle. This is because adverbials "seem to have no morphological properties that require XP-adjunction." He further argues that adverbials cannot be adjoined to an XP which is theta related and has an interpretation at the LF interface level. Thus, by definition, structures such as (3.11) are permitted if and only if XP is not a VP or an AP. But XP can be any functional projection or a light vP.

Secondly, Chomsky (1995, 285f.) argues that adverbials can be base adjoined recursively to any X' as a specifier; in contrast to Kayne's system, multiple specifiers are "permitted in principle on minimalist assumptions about phrase structure theory." In Chomsky's system, there could even be further proliferation of specifiers so that a single $X^0$ could have indefinitely many specifier positions:

Diagram (3.12)




The idea of multiple specifiers and specifier positions is adopted and developed further in Koizumi (1995), Laenzlinger (1996; 1998), Collins (1997) and Kitahara (1997), among many others. According to Koizumi (1995, 137ff.) the number of specifiers is determined by two factors: a category X can have a specifier feature for both an adjoined specifier and a canonical specifier (in Koizumi, Spec1 would be called an adjoined specifier, Spec2 a canonical specifier) and each specifier feature of X can enter into a checking relation only once, ie with only one element. Alternatively, Koizumi claims that a category X can have a specifier feature for indefinitely many adjoined specifiers and/or canonical specifiers, and a single specifier feature of X can enter into a checking relation a number of times, ie with a number of elements.

After this brief introduction to the treatment of adverbials within Kayne's Linear Correspondence Axiom and Chomsky's bare phrase structure theory, I move on to discuss the theories of adverbials which are based directly on them. I begin by discussing the theory of adverbials developed in Cinque (1997).

# 3.3. The Theory of Adverbials in Cinque

## 3.3.1. The Proposal

Cinque (1997) develops a highly restricted theory of adverbials as unique specifiers of $X^0$ heads. He divides adverbials into two categories: adverbials proper are AdvPs appearing in the unique specifiers of functional heads. Circumstantial adverbials can have various forms. They denote place, time, manner, means, company, reason, purpose and so on and are merged (presumably - Cinque is not very clear on this) into the specifier positions of V heads. Because Cinque focuses almost exclusively on adverbials proper, I will discuss these first and return to circumstantial adverbials in Sub-section 3.3.3.

In Cinque's system, each adverbial proper is the unique specifier of a distinct functional head, and functional heads have a fixed universal hierarchy. As a result, adverbials also come to have a fixed universal hierarchy. Cinque (1997, 6f.) gives the following examples from Italian and French, in order to show that the functional head taking *sempre/toujours* as its specifier precedes the one taking *completamente/ complètement* as its specifier, and that reversing the hierarchical order of functional heads (and hence also the hierarchical order of adverbials) results in ungrammaticality:

(6) a. *Gianni ha sempre completamente perso la testa per lei.*
*Jean a toujours complètement perdu la tête pour elle.*
'Gianni/Jean has always completely lost his mind for her'

b. * *Gianni ha completamente sempre perso la testa per lei.*
* *Jean a complètement toujours perdu la tête pour elle.*
'Gianni/Jean has completely always lost his mind for her'

[6a] is grammatical but [6b] is not because UG only allows for the hierarchical order of functional heads described in Diagram (3.13):

Diagram (3.13)

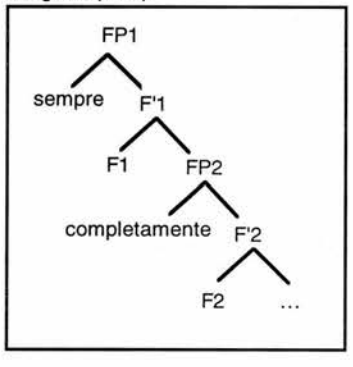
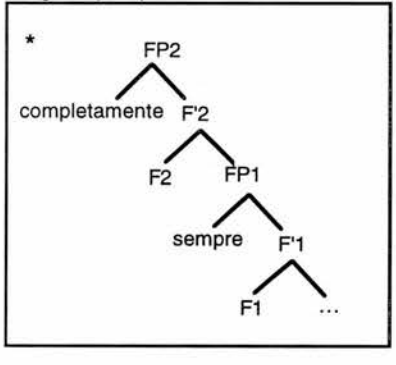



Diagram (3.14)




Cinque argues that adverbials entering specifier-head relations with functional heads must always be compatible with the semantics of the functional heads: epistemic adverbials must be specifiers of epistemic heads, temporal adverbials must be specifiers of Tense heads, and so on. In Diagram (3.14) *completamente* could not be the specifier of $F_1$ because the semantics of *completamente* and $F_1$ are not compatible. After examining data from a number of languages, Cinque (1997, 178) suggests the following universal order of adverbial-related functional projections:[8]

[8] As free adjunction to FP and free base generation in F' are disallowed in principle, Cinque needs to compensate for the decrease in potential adverbial positions by introducing a large number of new functional projections. According to Cinque (1997, 119ff.) the least costly assumption is to have all functional projections present universally in all sentences all the time. This means, for example, that a functional habitual aspectual projection should be present even in non-habitual sentences, and also
(continued ⇒)

... ⇒
*frankly* $\text{Mood}_{\text{speech act}}$ ⇒
*fortunately* $\text{Mood}_{\text{evaluative}}$ ⇒
*allegedly* $\text{Mood}_{\text{evidential}}$ ⇒
*probably* $\text{Mood}_{\text{epistemic}}$ ⇒
*once* T(Past) ⇒
*then* T(Future) ⇒
*perhaps* $\text{Mood}_{\text{irrealis}}$ ⇒
*necessarily* $\text{Mod}_{\text{necessity}}$ ⇒
*possibly* $\text{Mod}_{\text{possibility}}$ ⇒
*willingly* $\text{Mod}_{\text{volitional}}$⇒
*inevitably* $\text{Mod}_{\text{obligation}}$ ⇒
*cleverly* $\text{Mod}_{\text{ability/permission}}$ ⇒
*usually* $\text{Asp}_{\text{habitual}}$ ⇒
*again* $\text{Asp}_{\text{repetitive(I)}}$ ⇒
*often* $\text{Asp}_{\text{frequentative(I)}}$ ⇒
*quickly* $\text{Asp}_{\text{celerative(I)}}$ ⇒
*already* T(Anterior) ⇒
*no longer* $\text{Asp}_{\text{terminative}}$ ⇒
*still* $\text{Asp}_{\text{continuative}}$ ⇒
*always* $\text{Asp}_{\text{perfect(?)}}$ ⇒
*just* $\text{Asp}_{\text{retrospective}}$ ⇒
*soon* $\text{Asp}_{\text{proximative}}$ ⇒
*briefly* $\text{Asp}_{\text{durative}}$ ⇒
*characteristically(?)* $\text{Asp}_{\text{generic/progressive}}$ ⇒
*almost* $\text{Asp}_{\text{prospective}}$ ⇒
*completely* $\text{Asp}_{\text{SgCompletive(I)}}$ ⇒
*tutto* $\text{Asp}_{\text{PlCompletive}}$ ⇒[9]
*well* Voice ⇒
*fast/early* $\text{Asp}_{\text{celerative(II)}}$ ⇒

---

that the specifier positions of functional projections can remain unfilled. Note that, within the line of reasoning pursued in Cinque, all adverbial-related functional projections are associated with an independent semantic content, rather than with just a purely grammatical function.

[9] In Italian, *tutto* has been analysed both as a floating quantifier, and as an adverbial. Under the latter analysis, it's presence in the universal hierarchy of functional projections is expected.

*completely* $\text{Asp}_{\text{SgCompletive(II)}} \Rightarrow$
*again* $\text{Asp}_{\text{repetitive(II)}} \Rightarrow$
*often* $\text{Asp}_{\text{frequentative(II)}} \Rightarrow \ldots$

Interspersed with the adverbial-related functional projections, Cinque assumes there to be different types of argument-related functional projections. Subjects and objects, for example, are merged into Spec/VP positions but must raise to the specifiers of AgrSP and AgrOP for feature checking purposes. The fixed universal ordering of adverbials and adverbial-related functional projections, Cinque also argues, allows us to formulate predictions about where the projections of Agr heads are located in the structure: the AgrSP, for example, must be located higher up in the structure than some specific adverbial-related functional projections.

## 3.3.2. Movement of, and around, Adverbials

The idea that adverbials have a fixed universal order is in conflict with the fact that in many languages, they can occur in a number of linear positions. Cinque (1997, 20ff.) acknowledges this and gives the following examples of adverbials receiving the same interpretation in different linear positions:

(7) a. *Da allora, non accetta mica più sempre i nostri inviti.* *Italian*
'Since then, he doesn't any longer always accept our invitations'

b. *Da allora, non accetta i nostri inviti mica più sempre.*
c. *Da allora, non accetta sempre i nostri inviti mica PIÙ.*

Cinque (1997, 29ff.) suggests that each position of an adverbial proper can be associated with more than one linear position for any one of three reasons:

**(A)** The adverbial only deceptively has exactly the same interpretation in the two positions.

**(B)** The adverbial has moved, retaining the interpretation associated with the trace in the base generated position.

**(C)** Something else has moved around the adverbial.

[A] accounts for the following set of examples (from Cinque 1997, 29f.):

(8) a. *Slowly(,) John dropped his cup of coffee.*
b. *John slowly dropped his cup of coffee.*
c. *John dropped his cup of coffee slowly.*

In [8a-b], Cinque claims, the event of dropping the coffee cup is seen as slow even though the process of dropping may be quick. In [8c], he continues, the process of dropping is seen as slow and nothing is said about the event. He concludes that the adverbial *slowly* only deceptively has the same interpretation in [8a-c]: it occupies different hierarchical positions which correspond directly to the different linear positions. The claim that we are dealing with different adverbials in [8a-c] is supported by the fact that they can co-occur (consider *Slowly, John dropped his coffee cup slowly*).

Cinque (1997, 24) points out that adverbials which have the same interpretation in different linear positions have usually been A'-moved so that they retain the interpretation associated with the trace in the original position. Wh-movement of adverbials is a case in point: it is a legitimate operation as it creates a chain CH where the moved element is able to c-command its trace. It also meets the requirements for uniformity and last resort, in that the moved element is a maximal projection and its movement is driven by feature checking. Cinque (1997, 25f.) proposes that in sentences such as [9a-b], the adverbials *mal* and *bien* have undergone Wh-type movement on their own. But as Cinque's discussion of this data is very sketchy, it is unclear what their derived positions are, and what drives their movement to these positions in the first place:

(9) a. *?Vous avez mal dû raccrocher.* *French*
'You must have hung up badly'

b. *Il a bien dû se comporter.*
'He has well had to behave'

In [7a-c] the adverbials *mica*, *più* and *sempre* have the same interpretation in the various linear positions. Cinque takes this to point towards a movement analysis. But he claims that the moving elements cannot be the adverbials *mica*, *più* and *sempre* because their derived positions cannot be connected by a chain to the traces in the original positions. He concludes that *mica*, *più* and *sempre* must still occupy their original positions, and something else has moved around them:

(10) a. *Da allora, non accetta mica più sempre [i nostri inviti]*
b. *Da allora, non accetta [i nostri inviti]$_i$ mica più sempre* $t_i$

Adverbials, Cinque further argues, can also move as parts of larger constituents. In [7c], repeated here as [11a], the moving element is a larger constituent containing the adverbial *sempre* and the direct object *i nostri inviti:*

(11) a. *Da allora, non accetta mica più [sempre [i nostri inviti]]*
b. *Da allora, non accetta [sempre [i nostri inviti]]$_i$ mica PIÙ* $t_i$

Based on these examples, Cinque (1997, 32) concludes that the existence of various adverbial positions is often "only an illusion created by moving lower portions of the clause around one or more AdvPs higher up in the structure of the clause."

### 3.3.3. Circumstantial Adverbials

According to Cinque (1997, 40ff.), circumstantial adverbials are typically realised by categories other than adverbs. Unlike adverbials proper, he argues, circumstantial adverbials do not have a fixed hierarchical order which would correspond directly to a fixed linear order. The following examples from Italian are from Cinque (1997, 40):

(12) a. *Seguirò le lezioni tutti i giorni all'università diligentemente.*
'I will attend classes every day at the university with great zeal'

b. *Seguirò le lezioni all'università tutti i giorni diligentemente.*
c. *Seguirò le lezioni all'università diligentemente tutti i giorni.*
d. *Seguirò le lezioni diligentemente all'università tutti i giorni.*

In Cinque's system, circumstantial adverbials cannot be analysed as the unique specifiers of clausal functional heads: if they could, they would have to have a fixed hierarchical and linear order with regard to each other. Without discussing any details, Cinque (1997, 41f.) suggests the following possible analyses of circumstantial adverbials. They could

**(A)** involve multiple adjunction and multiple rearrangement, in the sense of Chomsky (1995, 333).

**(B)** be predicates predicated of VP.

**(C)** be base generated as specifiers of layered V heads.

Cinque (1997, 42) notes briefly that **(C)** is perhaps the most desirable option, so that circumstantial adverbials are base generated as specifiers of V heads. But he does not

address the question whether particular types of circumstantial adverbials can only be base generated as, or rather, merged into the specifier positions of particular types of V heads, in the same way as epistemic adverbials can only be merged into the specifiers of epistemic functional heads (the semantic properties given to circumstantial adverbials would imply this to be the case), or whether they can be merged freely into any Spec/VP position. From our point of view, these are important questions. If each circumstantial adverbial is in a unique Spec/VP position and V heads are hierarchically ordered with regard to one another, then the various linear positions of the adverbials *tutti i giorni, all'università* and *diligentemente* in [12a-d] must result from movement. But what is their original hierarchical order? What allows $V^0$ heads to license these adverbials in their specifer positions? What drives the movement of adverbials to derived positions, and where, exactly, are their derived positions? If, on the other hand, the opposite is true so that the adverbials *tutti i giorni, all'università* and *diligentemente* can be merged into Spec/VP positions in whichever order they happen to come out of the numeration, then one should be able to show that there really is no difference in their interpretation in [12a-d]. But unfortunately, Cinque (1997) does not address any of these questions. There are also some other problems with Cinque's theory which I will take up in the next sub-section.

### 3.3.4. Some Observations

Cinque (1997) argues on several occasions that adverbials proper have a fixed universal order: each hierarchical position is associated with one and only one interpretation so that a change in hierarchical position always results in a change in interpretation. He also proposes that the existence of different adverbial positions is often only an illusion created by moving lower portions of the clause around one or more AdvPs higher up in the structure of the clause.

But these claims are problematic even within Cinque's own assumptions. Firstly, the idea that adverbials have a fixed universal order is weakened by the fact that a single functional projection is allowed to appear in different hierarchical positions. The projections of functional $Asp_{repetitive}$, $Asp_{frequentative}$ and $Asp_{celerative}$ heads have two different hierarchical positions each in Cinque's universal hierarchy of functional projections. This means that the adverbials in their unique specifier positions can have two different hierarchical positions each, without any change in interpretation:

Diagram (3.15)

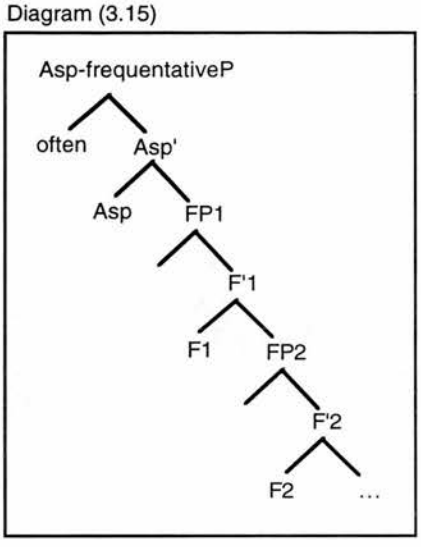
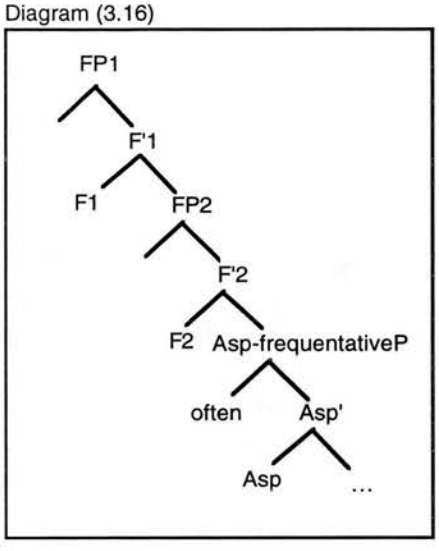



Diagram (3.16)




Even if the two $Asp_{frequentative}$ projections are mutually exclusive, barring adverbials such as *often* from occurring twice with the same interpretation, it is against the restrictive nature of Cinque's theory to allow a single functional projection to appear in different positions. It is also unclear why the two $Asp_{frequentative}$ projections should be needed at all: if adverbials such as *mica* and *più* can end up in a number of linear positions because the verb and its complement(s) move across them, then one may wonder why adverbials such as *often* cannot end up in a number of linear positions in the same way.

Secondly, Cinque (1997) assumes that manner adverbials such as *bene/well* are merged universally into Spec/VoiceP while circumstantial manner adverbials such as *diligentemente/diligently* are merged into Spec/VP. But this leads to a system in which manner interpretation is associated with two different heads and hierarchical positions: both $Voice^0$ and $V^0$ heads carry features which enable them to license manner adverbials in their unique specifier positions. This is a very serious problem for Cinque's theory of adverbials because under this line of reasoning, one would expect *bene* to be able to co-occur with circumstantial manner adverbials. Data from English, Finnish, Swedish, German, Dutch and Italian show clearly that this is not possible:[10]

(13) a. **Sirkku has done everything well diligently.* *English*
**Sirkku has done everything diligently well.*

[10] The judgments for the German, Dutch and Italian examples in [13d-f] are due to Miriam Eckert, Max Louwerse, Ineke Mennen, Ludovica Serratrice and Renata Casertano (personal communication).

b. **Sirkku on tehnyt kaiken kunnolla ahkerasti.* *Finnish*
**Sirkku on tehnyt kaiken ahkerasti kunnolla.*

c. **Sirkku har gjort allting bra duktigt.* *Swedish*
**Sirkku has gjort allting duktigt bra.*

d. **Sirkku hat alles gut gründlich erledigt.* *German*
**Sirkku hat alles gründlich gut erledigt.*

e. **Sirkku heeft alles goed ijverig gedaan.* *Dutch*
*??Sirkku heeft alles ijverig goed gedaan.*

f. **Sirkku ha fatto tutto bene diligentemente.* *Italian*
**Sirkku ha fatto tutto diligentemente bene.*

Some of the issues which are either not addressed at all (eg the original and possible derived positions of circumstantial adverbials) or which are problematic for Cinque (eg the prediction that two different heads can license the same types of adverbials) are called to attention in the other feature-based theories of adverbials. I will discuss the system proposed in Alexiadou (1997) in the next section.

## 3.4. Adverbial Licensing and Movement in Alexiadou

Based on Kayne's version of the LCA, Alexiadou (1997) distinguishes between specifier-type and complement-like adverb(ial)s. Specifier-type adverbials are merged as unique left-branching specifiers of functional heads. In order to be licensed in specifier positions, the adverbials must have features which match the features of the functional heads: aspectual adverbials can only be licensed in the specifiers of aspectual functional heads, for example. Because functional heads are hierarchically ordered, specifier-type adverbials also end up being hierarchically ordered.

Complement-like adverbials, Alexiadou argues, are merged into the complement of V position - each $V^0$ can take one and only one complement. The following diagrams give the pre-movement positions of Alexiadou's specifier-type and complement-like adverbials:

Diagram (3.17)

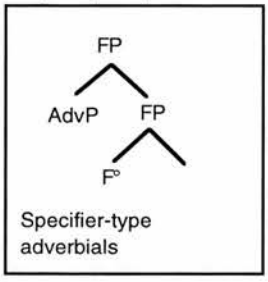
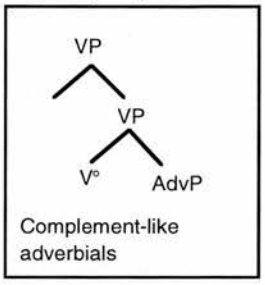



Diagram (3.18)




Alexiadou (1997, 129) formulates the following generalization:

> *Generalization*
> Specifier-type adverbs have their base position to the left of the verb (non-thematic, specifiers of NegPs, AspectPs), hence they are VP external. Complement-like ones have their base position to the right of the verb, hence they are VP internal.

Alexiadou (1997, 109ff.) then discusses the status of both time and manner adverbials as complement-like adverbials (ie as complements of V). Considering time adverbials first, she discusses the idea that predicates have an extra argument position for spatio-temporal location. She analyses time adverbials as referential NPs giving temporal locations and bearing a referential thematic role and, on the assumption that the VP is the hierarchical representation of the arguments of the verb, proposes that they have their base position inside the VP but move to Spec/TP, to check their temporal features against a functional $T^0$. This movement to Spec/TP can take place either befor or after the operation Spell-out. Because direct objects are able to c-command and bind into the time adverbials, Alexiadou (1997, 110ff.) concludes that time adverbials have their base position lower down inside the VP than the direct objects. She gives the following constructions involving binding and negative polarity items, antecedent contained deletion and weak crossover effects, in support of her conclusion that time adverbials are located lower down inside the VP than direct objects:[11]

(14) a. **Sue saw anybody on none of those days.*
b. *Sue saw nobody on any of those days.*

c. *When did Mary read everything that Bill did?*

---

[11]For more discussion on antecedent contained deletion, see Hornstein (1995, Chapter 5). For discussion on wco, see Lasnik & Stowell (1991) and Hornstein (1995, Chapter 6). Some discussion on sentences like [14a-e] can also be found in Larson (1988; 1990), Jackendoff (1990) and Stroik (1996).

d. *On what day did Mary see everyone that Bill did?*

e. **Which day$_k$ did you read a poem about its$_k$ sunset?*

But sentences like [14a-e] are problematic. Antecedents can appear either in their base positions or in derived A-positions - on the assumption that direct objects raise overtly to Spec/AspectP, Spec/AgrOP or both, sentences like [14a-e] only show that time adverbials have their base position lower down in the structure than these derived positions. They do *not* show that time adverbials have their base position in the complement of V position, ie in the lowest position in the structure. Secondly, standard weak crossover effects are due to the fact that a variable such as a trace left by *which day* cannot be coindexed with a pronoun such as *its* to its left. But sentences like [15a-b] show that the trace left by the time adverbial *Minä päivänä* 'which day' *can* sometimes be co-indexed with a pronoun on its left. Alternatively, the well-formedness of [15a-b] could be due to the trace appearing higher up in the structure than the pronoun so that it is co-indexed with a pronoun to its *right*, rather than to its left - but this would be contradictory to Alexiadou's proposal that time adverbials appear in the lowest position in the structure ([15a] was provided by Urpo Nikanne, personal communication):

(15) a. *Minä päivänä$_k$ katsoit ennusteen sen$_k$ säästä?* *Finnish*
Which day$_k$ did you watch a/the forecast about its$_k$ weather

b. *Minä päivänä$_k$ kuulit uutisia sen$_k$ tapahtumista?*
Which day$_k$ did you hear some news about its$_k$ events

Alexiadou (1997, 128ff.) analyses also manner adverbials as complement-like adverbials. She begins by arguing that manner adverbials correspond to "optional arguments of V" and are parallel to referential NPs in that "they restrict the range of events denoted by the verb." She then discusses the view presented in McConnell-Ginet (1982) and Larson (1988) that lexical verbs combine with manner adverbials before combining with their subject and object arguments and concludes that, although manner adverbials have their base position inside the VP, they are sometimes required to move to Spec/VoiceP. This, she argues, explains why some manner adverbials appear to the left while others appear to the right, of the direct object in linear word order - the examples and glosses in [16] and [17] are from Alexiadou (1997, 136ff.):

(16) a. *Katalave kala tin erotisi.* *Greek*
Understood-IMP:3sg well the-question-ACC

b. * *Katalave tin erotisi kala.*
'Understood-IMP:3SG the-question-ACC well'

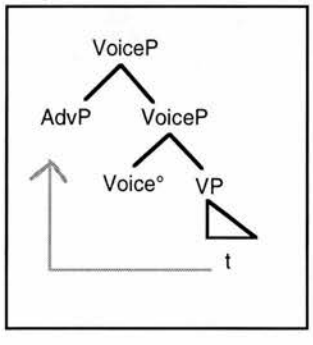
c. *Katalave tin erotisi KALA.*
'Understood-IMP:3SG the-question-ACC WELL'

(17) a. * *Efage me poli argo rithmo ti supa.*
'He ate in a very slow manner the soup'

b. *Efage ti supa me poli argo rithmo.*
Ate-3SG the soup-ACC with very slow rhythm-ACC
'He ate the soup in a very slow manner'

As we have just seen, Alexiadou analyses time adverbials as complements of V which move to Spec/TP, for feature checking purposes. She analyses also manner adverbials as complements of V. However, she relates the movement of manner adverbials to Spec/VoiceP to properties of the LCA, rather than to feature checking. Alexiadou (1997, 139ff.) argues, much in line with Chomsky (1995, 249), that "every right branching structure must end in a trace, when the right branch lacks internal structure." She proposes that manner adverbials such as the Greek *kala* are "weak" elements in the sense that they lack internal structure. She further proposes that, because "weak" elements are not visible to the LCA, they must raise overtly to a position in which they are visible and can be linearly ordered by it, in order to avoid a crash at PF. In the case of "weak" manner adverbials, the relevant position is Spec/VoiceP:[12]

Diagram (3.19)




The requirement that every right branching node must end in a trace when the right branch lacks internal structure explains why [16b] is ungrammatical while both [16c] and [17b] are grammatical: focussed AdvPs such as *KALA* and PPs such as *me poli argo rithmo* are "strong" elements in the sense that they have a more complex internal

[12] Note that this use of the term *weak* has nothing to do with *weak features:* here "weak" elements are the ones undergoing overt movement to Spec/VoiceP, while *weak features* are the ones which drive covert movement.

structure. Being "strong" elements, they are visible to and can be linearly ordered by the LCA already in their original base positions; hence, there is no need for them to move to Spec/VoiceP.

Alexiadou's system is also able to explain the following Italian examples:

(18) a. *Lui non ha rivisto bene i suoi appunti.* *Italian*
'He hasn't corrected his notes well'

b. * *Lui non ha rivisto i suoi appunti bene.*
'He hasn't corrected his notes well'

c. *Lui non ha rivisto i suoi appunti BENE.*
'He hasn't corrected his notes WELL'

(19) a. * *Lui non ha rivisto diligentemente i suoi appunti.*
'He hasn't corrected diligently/with great zeal his notes'

b. *Lui non ha rivisto i suoi appunti diligentemente.*
'He hasn't corrected his notes diligently/with great zeal'

In Cinque's system, manner adverbials like *bene* would be merged into Spec/VoiceP while adverbials like *diligentemente* would be merged into an appropriate Spec/VP. This would then explain the differences in their distribution. However, in Alexiadou's system, both *bene* and *diligentemente* are merged as unique right branching complements of V. Because *bene* is a "weak" element, lacking internal structure, it must move overtly to Spec/VoiceP, in order to be seen and linearly ordered by the LCA. This explains the difference between [18a-b]. But because both *BENE* and *diligentemente* are "strong" elements in the sense that they have a more complex internal structure, they are visible to the LCA already in their base positions: hence, they must stay in situ. This explains the difference between [18b-c] and [19a-b]. Because Alexiadou's system does not involve a distinction between two different types of manner adverbials which are licensed in two different structural positions, it is clearly more economical and restricted than Cinque's system. Alexiadou's system, unlike Cinque's system, is also able to explain why two manner adverbials cannot usually co-occur (cf. the sentences in [13a-f] above) - they cannot co-occur because a single complement of V position cannot accommodate two elements at the same time.

Although Alexiadou's system has the advantage of being more economical and restrictive than Cinque's system, it has some problems concerning complement-like adverbials. Recall that both time and manner adverbials are analysed as complement-like adverbials so that they have their base position to the right of the verb - however, the fact that time and manner adverbials can co-occur suggests that one of them can

sometimes also have its base position to the *left* of the verb. In other words, in order to explain the grammaticality of sentences like [20a-c], Alexiadou would have to assume that one of the adverbials has its base position to the right of the verb while the other one has its base position to the *left* of the verb. But this would make her generalization about specifier-type adverbials having their base position to the left of the verb and being always VP-external, and complement-like adverbials having their base position to the right of the verb and being always VP-internal, wrong; rather, specifier-type adverbials would have to appear to the left of the lexical V but be either VP-external or *VP-internal.* As Alexiadou does not discuss sentences like [20a-c] at all, it is unclear how she would handle this situation:

(20) a. *Sue saw nobody any clearer on any of those days.*
b. *When did Mary read fluently everything that Bill did?*
c. *On what day did Mary read fluently everything that Bill did?*

Another problem concerns the movement of time and manner adverbials to Spec/TP and to Spec/VoiceP. If both types of adverbials have their base position to the right of the verb, and if every right branching structure must end in a trace when the right branch lacks internal structure, then it is unclear why the movement of time adverbials to Spec/TP needs to be driven by both morphological feature checking *and* the requirement that "weak" elements must move overtly to a derived position before Spell-out, while the movement of manner adverbials to Spec/VoiceP is only driven by the requirement that "weak" elements must move to a derived position, in order to avoid a crash at PF. It is also unclear what happens when a time adverbial is associated with weak morphological features which drive movement from the base position to Spec/TP *after* the operation Spell-out, but is also at the same time a "weak" element in the sense that it lacks internal structure - this would require movement out of the base position *before* the operation Spell-out.

## 3.5. The Double Specifier Model of Laenzlinger

Laenzlinger (1996; 1998) shares with Cinque and Alexiadou the idea that adverbials are merged as specifiers of $X^0$ heads, under feature checking or feature matching between the adverbial and the appropriate $X^0$ head. In Laenzlinger's system, $X^0$ corresponds to both functional and $V^0$ heads so that adverbials are merged as specifiers of functional and $V^0$ heads. Because both types of heads are hierarchically ordered, the adverbials in

their specifier positions also end up being hierarchically ordered.

Laenzlinger divides adverbials into two categories: quantifier adverbials assign a quantificational value, while qualifier adverbials assign a qualificational value, to a variable. Although both quantifier and qualifier adverbials are licensed as A'-specifiers (Laenzlinger distinguishes between A-specifiers and A'-specifiers - I will return to this briefly) of functional and $V^0$ heads, Laenzlinger (1996, 114ff.) assumes there to be a difference in the way in which the checking of their features takes place. Quantifier adverbials, like quantificational elements in general, he argues, are subject to the so-called Adv-Criterion:

*Adv-Criterion*
A [+F] adverbial phrase must be in Spec-head configuration with a [+F] $X^0$.

According to Laenzlinger (1996, 114), the Adv-Criterion can only be satisfied "by the head of the chain, by the lexical element itself at the end of the derivation." Thus, quantifier adverbials cannot move after having checked their quantificational features. But qualifier adverbials are subject to checking theory: they check lexically related features, including Case, ϕ- and maybe θ-features. The requirement to check Case, ϕ- and θ-features, Laezlinger argues, can be satisfied by any member of the chain. This means that qualifier adverbials can move even after having checked their features. [21] and [22] from Laenzlinger (1996, 114f.) illustrate the difference between quantifier and qualifier adverbials, and hence also the difference between the Adv-Criterion and checking theory. The examples in [21] are ungrammatical because the quantifier adverbials have moved after having satisfied the Adv-Criterion. But the examples in [22] are grammatical even though the qualifier adverbials have moved to a topic or focus position, after feature checking has taken place:

(21) a. * *<u>Beaucoup</u>$_i$, j'ai* $\boldsymbol{t_i}$ *apprécié ces livres.* *French*
'Very much I liked these books'

b. * *C'est <u>énormèment</u>$_i$, que j'ai* $\boldsymbol{t_i}$ *dormi ce matin.*
'It is a lot that I slept this morning'

c. * *C'est <u>probablement</u>$_i$ que* $\boldsymbol{t_i}$ *tu as vu Marie.*
'It is probably that you saw Mary'

d. * *<u>DEJA</u>$_i$, il est* $\boldsymbol{t_i}$ *venu ici, mais seulement une fois.*
'Already he went there, but not more than once'

(22) a. *Attentivement$_i$, j'ai* $t_i$ *lu ces livres.*
'Carefully he read these books'

b. *C'est récomment$_i$ qu'il achèva* $t_i$ *sa thèse.*
'It is recently that he completed his thesis'

c. *C'est impoliment$_i$ qu'il s'adressa* $t_i$ *à la Reine.*
'It is rudely that he spoke to the queen'

d. *DEMAIN$_i$ nous irons* $t_i$ *à la plage, pas aujourd'hui.*
'Tomorrow we will go to the beach, not today'

In Laenzlinger's system, projections can have at most two specifiers: an A-specifier and an A'-specifier. An A-specifier is licensed by the presence of A-features on the head, eg θ-features and ϕ-features. A'-specifiers are licensed by the presence of A'-features (quantificational and Case, ϕ- and θ-features) on the head: they give rise to the Adv-Criterion and to checking theory, respectively. A single head X can carry both A- and A'-features so that the projection of X has both an A- and an A'-specifier. Laenzlinger (1996, 109) gives the following definitions: α is an A-specifier of β iff

(i) α and β are sisters, and
(ii) β is a projection

and α is an A'-specifier of β iff

(i) α and β are sisters, and
(ii) β is a segment

These definitions yield the following structures (from Laenzlinger 1996, 109):

Diagram (3.20)

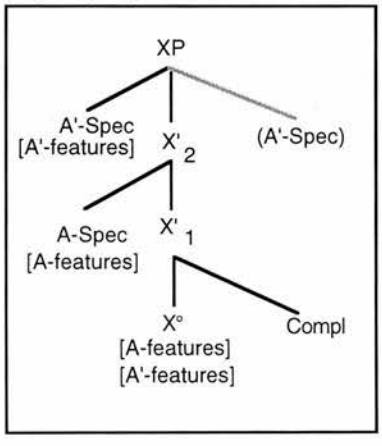
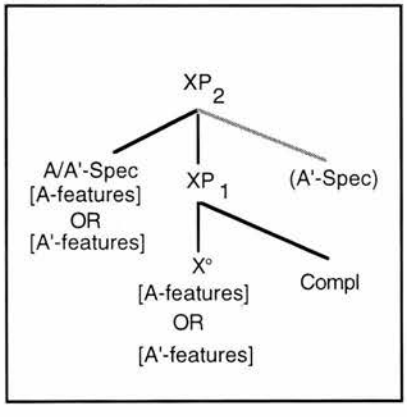



Diagram (3.21)




According to Laenzlinger, in (3.20) the A-specifier is sister to a $X'_1$, which is a

projection of $X^0$ whereas in (3.21) it is sister to $XP_1$, which is also a projection of $X^0$. Hence, the A-specifier and X'/XP are sisters, and $X'_1/XP_1$ is a projection, as is required. But the A'-specifier is a sister either to $X'_2$ or $XP_1$: both $X'_2$ and $XP_1$ are segments of a two-segment category X'/XP. The relative ordering of A'-Specifiers and A-Specifiers (so that A'-Specifiers are higher up than A-Specifiers) follows from the requirement that operators must c-command entire projections.[13]

Contra Kayne (1994), Chomsky (1993; 1994; 1995), Cinque (1997) and Alexiadou (1997), Laenzlinger allows his A'-specifiers to branch freely to the left and the right, arguing that empirical evidence supports the need for a sentence final non-complement position. The examples in [23a-b] from Laenzlinger (1996, 112f.) show how time adverbials, although they are merged as specifiers of a functional head which is high up in the structure, can sometimes follow all other sentence elements in linear word order:

(23) a. *Jean a regardé Marie discrètement/ hier.* *French*

b. *John looked at Mary discreetly/ yesterday.* *English*

If, Laenzlinger argues, manner adverbials are analysed as the right-branching A'-Specifiers of VP and temporal adverbials as the right-branching A'-specifiers of T(ense)P, the scope properties of the adverbials in sentences such as [23a-b] can be explained in a maximally simple way. A right-branching adverbial is the specifier of the maximal projection over which it has scope, in exactly in the same way as a left-branching adverbial is the specifier of the maximal projection over which it has scope. This is also the position taken in Ernst (in preparation). In addition to the scopal properties, Laenzlinger argues that the idea of right-branching A'-specifier positions finds support in particular types of relativized minimality effects: the blocking effects on the extraction of the French quantifier *combien* from a nominal complement can be expected, he argues, if the sentence final adverbials *vraiment énormément* and *vraiment souvent* occupy an intervening, right-branching A'-Specifier position. The following examples and glosses are from Laenzlinger (1996, 113):

(24) a. * *[Combien]$_i$ as-tu [e ]$_i$ lu de livres de Chomsky vraiment énormément/ souvent?* *French*

---

[13] In other words, when the $X^0$ head has both A- and A'-features, it projects to a two-segment category X' and to XP. When it has either A-features or A'-features, but not both, it projects to a two-segment category XP.

b. *[Combien de livres de Chomsky]$_i$ as-tu lus [e ]$_i$ vraiment énormément/ souvent?*
'How many of Chomsky's books did you read really a lot/ often?'

Although Laenzlinger's theory of adverbials does not share the problems of Cinque and Alexiadou, it raises some questions of its own. Most importantly, the introduction of right-branching specifier positions is not only against the otherwise restrictive nature of Laenzlinger's theory but it also results in a number of incorrect predictions. For example, if A'-Specifier nodes can branch both to the left and the right, then Laenzlinger is forced to introduce some extra assumptions in order to explain why some A'-Specifier nodes can only branch to the left, while others only branch to the right:[14]

(25) a. *I have always lived elegantly.* *English*

b. **I have lived elegantly always.*

c. *Jean a regardé Marie hier.* *French*
'Jean looked at Marie yesterday'

d. **Jean a regardé hier Marie.*
'Jean looked yesterday at Marie'

e. **Jean hier a regardé Marie.*
'Jean yesterday looked at Marie'

Secondly, on the assumption that manner adverbials appear in a right-branching Spec/VP and time adverbials in a right-branching Spec/T(ense)P, one is forced to predict that the Finnish examples in [26a] differ in their interpretation. In other words, the linear word order of [26a] would have to correspond to a "normal" hierarchical order whereas the linear word order of [26b] would have to be the result of moving the manner adverbial across the time adverbial to some right-branching specifier of a functional head. As movement must always be driven by morphological feature checking, one would be forced to predict that the manner adverbial has focus or some other formal features which drive its movement to the right-branching specifier position:

[14]The French examples in [25c-e] are due to Dominique Jacquel (personal communication).

(26) a. *Sirkku o-n kävel-lyt ontu-ma-lla joka ilta.*
Sirkku-nom be-pres-3sg walk-2pcp limp-3inf-Adess every night
'Sirkku has walked with a limp every night'

b. *Sirkku o-n kävel-lyt joka ilta ontu-ma-lla.*
Sirkku-nom be-pres-3sg walk-2pcp every night limp-3inf-Adess
'Sirkku has walked every night with a limp'

There is, however, no difference in interpretation or focus structure between [26a-b]. Further, this is a general fact about circumstantial adverbials in Finnish and in number of other languages: circumstantial adverbials do not have any fixed ordering with respect to each other. This is strong evidence against the movement analysis proposed in Laenzlinger.

## 3.6. Final Remarks

Within the feature based theories of adverbials of Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997) adverbials are inserted into the specifier positions of functional $F^0$ and of $V^0$ heads, under semantic feature checking or feature matching between the adverbials and the functional or $V^0$ heads. Both functional and $V^0$ heads are associated with an independent semantic content, and they are hierarchically ordered with regard to each other: hence, the linear ordering of adverbials directly reflects the hierarchical ordering of clausal functional projections. The fact that adverbials have a fixed linear order also allows us to formulate predictions about the base and derived positions of subject and object arguments.

The problem that all of these systems share concerns the movement of adverbials: if the position of adverbials can change because of movement (especially to Spec/TP and to Spec/VoiceP), then it is doubtful if such predictions about the base and derived positions of subject and object arguments can still be made. And as we have seen, all these systems also involve some other problems which need to be solved before we can apply them to Finnish: for example, although Cinque's theory gives a detailed analysis of the licensing and distribution of adverbials proper such as *probably* and *always,* it has little to say about the licensing and distribution of circumstantial adverbials such as *diligently* and *with a limp*. It also fails to be maximally restrictive in that it allows the same types of adverbials to be merged into two different structural positions, and makes wrong predictions about the co-occurrence restrictions on adverbials. Although Alexiadou's theory does not have the same disadvantages, there

are problems with the complement-like adverbials of time and manner appearing on a right branch. Laenzlinger's theory fails to be maximally restrictive in that it allows for both left-branching and right-branching specifier nodes. The left- and right-branching specifiers also mean that Laenzlinger must introduce some extra assumptions, in order to explain why some adverbials can only appear to the left of the verb. Finally, Laenzlinger's theory makes wrong predictions about the mutual ordering of sentence-final adverbials.

The most serious problem, from the point of view of the present thesis, is that the feature-based systems of adverbials of Laenzlinger, Alexiadou and Cinque mainly focus on the licensing and distribution of adverbs/AdvPs and have little to say about the licensing and distribution of the other categories functioning as adverbials. Because in Finnish, adverbials are often realised by DPs, AdjPs, NumPs and infinitivals which show many striking similarities with adverbs/AdvPs, a useful theory of adverbials should be able to account for the licensing and distribution of these other elements. In addition, it should be able to explain why circumstantial adverbials are not linearly ordered with regard to one another, without losing any aspects of its restrictive nature. In Chapter Four, I will show that Finnish DPs, AdjPs, NumPs, infinitivals, and adverbs/AdvPs functioning as manner adverbials can all be analysed uniformly as KPs. This allows us to extend the feature based systems discussed here to adverbials which are not realised by AdvPs.

## Chapter Four

# The Internal Structure of Finnish Manner Adverbials

In this chapter, I develop a theory of adverbials which can be integrated into the theory of phrase structure of Kayne (1994) and Chomsky (1993; 1994; 1995) and the theories of adverbials of Laenzlinger (1996), Alexiadou (1997) and Cinque (1997). In Section 4.1. I give examples of different types of manner adverbials and establish that in Finnish, they are realised by case-inflecting nominals and infinitivals, and by adverbs/AdvPs. In Section 4.2. I discuss case licensing and case feature checking in bare phrase structure and GB. In Section 4.3. I develop a system of case licensing and case feature checking which brings out the difference between structural and lexical case. In Section 4.4. I analyse the different types of manner adverbials given in Section 4.1. in terms of this system. In Section 4.5. I discuss the internal structure of Finnish manner adverbs/AdvPs. I propose that adverbs/AdvPs should be analysed as adjectives and nouns carrying an inflectional ending for lexical "adverb" case. The proposal that adverbs/AdvPs are adjectives and nouns carrying an inflectional ending for lexical case allows us to generalize that Finnish case-inflecting adjectives, nouns and infinitivals, and adverbs/AdvPs have similar types of structures. This then explains the similarities in their behaviour.

## 4.1. Finnish Manner Adverbials

### 4.1.1. Nominals (*Nominit*)

In Finnish, all nominal items, ie all DPs, AdjPs and NumPs functioning as manner

adverbials have morphological case; some morphological cases, such as the Adessive, are productive in the sense that they are constantly used to form new expressions of manner whereas others, like the Translative and the Essive, can receive manner interpretations in only fixed expressions.

Finnish nominal manner adverbials are most typically DPs carrying an inflectional ending for the Adessive case:

(1) a. *Sirkku saapu-i vauhdi-lla.*
Sirkku-Nom arrive-past-3sg speed-Adess
'Sirkku arrived with speed'

b. *Sirkku katso-i Pulmu-a lämmö-llä.*
Sirkku-Nom look-past-3sg Pulmu-Acc warmth-Adess
'Sirkku looked at Pulmu warmly, with warmth'

The manner adverbials in [1a-b] are maximal projections (XPs) rather than just $X^0$ heads - this is shown by the fact that they can undergo operations which are open to maximal projections but not to $X^0$s. In Chapter Three, we have seen how nominal manner adverbials are left behind in constructions involving verb movement to AgrS. [2a-d] show, in turn, how they are able to undergo Wh- and focus movement which, being instances of A'-movement, are also open to maximal projections but not to $X^0$s:[1]

(2) a. *Miten$_i$ Sirkku saapui* $\boldsymbol{t_i}$ *?*
'How did Sirkku arrive'

b. *Miten$_i$ Sirkku katsoi Pulmua* $\boldsymbol{t_i}$ *?*
'How did Sirkku look at Pulmu'

c. *Vauhdilla$_i$ Sirkku saapui* $\boldsymbol{t_i}$.
'It was with speed that Sirkku arrived'

d. *Lämmöllä$_i$ Sirkku katsoi Pulmua* $\boldsymbol{t_i}$.
'It was with warmth that Sirkku looked at Pulmu'

Finnish nominal manner adverbials can also be DPs carrying an inflectional

[1] A-positions are specifier positions which can contain an argument of V as a result of merge or move, while A'-positions are specifier positions which can contain either a non-argument as a result of merge, or an argument as a result of move. Movement to A-positions is driven by case feature checking, while movement to A'-positions covers operator movement, scrambling and topic and focus movement. In the bare theory, the distinction between A-movement and A'-movement is somewhat unclear - because both types of movement are driven by feature checking, a morphological property, they differ only with regard to the types of features that are involved.

ending for Instructive, Abessive, Partitive, Translative, Essive or Illative case. Setälä (1952, 49ff.) argues that the Finnish Partitive can be used both as a structural and lexical (abstract locative) case - under this view, Finnish manner adverbials which have the form of DPs always carry an inflectional ending for lexical case (ie the adverbial uses of the Finnish Partitive are instances of lexical case):[2]

(3) a. *Sirkku näki-i asia-n om-i-n silm-i-n.*
Sirkku-Nom see-past-3sg matter-sg-Acc own-pl-Instr eye-pl-Instr
'Sirkku saw it with her own eyes'

b. *Pulmu kasvo-i kuri-tta.*
Pulmu-Nom grow-past-3sg discipline-Abess
'Pulmu grew up without discipline'

c. *Sirkku kävele-e hurja-a vauhti-a.*
Sirkku-Nom walk-pres-3sg frantic-Part speed-Part
'Sirkku walks frantically'

d. *Halua-n lausu-a runo-j-a ruotsi-ksi.*
Want-pres-1sg recite-inf1 poem-pl-Part Swedish-Trans
'I want to recite poems in Swedish'

e. *Juoks-i-mme sinne ihan sika-na.*
Run-past-1pl there very pig-Ess
'We run there really frantically' (coll. - lit. 'We run there as if we were pigs')

f. *Sinu-sta juoru-ta-an salaperäis-een tap-aan.*
You-Elat rumour-pass-Agr secretive-Illat way-Illat
'There are secretive rumours going around about you'

All the adverbials in [3] are able to undergo focus-movement - this suggests, again, that they are maximal projections, rather than $N^0$ heads:

(4) a. *Omin silmin$_i$ Sirkku näki asian* $\mathbf{t_i}$.
'It was with her own eyes that Sirkku saw it'

b. *Kuritta$_i$ Pulmu kasvoi* $\mathbf{t_i}$.
'It was without discipline that Pulmu grew up'

c. *Hurjaa vauhtia$_i$ Sirkku kävelee* $\mathbf{t_i}$.
'It is frantically that Sirkku walks'

---

[2] Although Setälä (1952, 57) classifies adverbials such as *ruotsiksi* in [3d] as manner adverbials, most other Finnish grammarians disagree. An adverbial like *ihan sikana* in [3e] could be treated as an idiom, rather than as a productive way of expressing "pure" manner.

d. *Salaperäiseen tapaan*$_i$ *sinusta juorutaan* $t_i$.
'It is in a secretive way that you area being talked (lit. rumoured) about'

Let us now move on to look at AdjPs and NumPs. In Finnish, manner adverbials which have the form of AdjPs carry an inflectional ending for the Adessive or the Partitive case, while NumPs carry an inflectional affix for the Partitive case:[3]

(5) a. *Mika Häkkinen kaasutt-i täysi-llä.*
Mika Häkkinen-Nom accelerate-past-3sg full-Adess
'Mika Häkkinen accelerated fast'

b. *Sirkku juoks-i kova-a.*
Sirkku-Nom run-past-3sg hard-Part
'Sirkku ran fast'

c. *Pulmu polk-i tuhat-ta ja sata-a.*
Pulmu-Nom pedal-past-3sg thousand-Part and hundred-Part
'Pulmu pedalled (her bicycle) very fast'

d. *Mika Häkkinen ajo-i kahtasata-a.*
Mika Häkkinen-Nom drive-past-3sg two hundred-Part
'Mika Häkkinen was driving two hundred kilometres per hour' (ie he was driving as fast as 200 kph)

The adverbials in [5] are also maximal projections, rather than just $X^0$s; [6] show how they are able to undergo focus movement:

(6) a. *Täysillä*$_i$ *Mika Häkkinen kaasutti* $t_i$.
'It was fast that Mika Häkkinen accelerated'

b. *Kovaa*$_i$ *Sirkku juoksi* $t_i$.
'It was fast that Sirkku ran'

c. *Tuhatta ja sataa*$_i$ *Pulmu polki* $t_i$.
'It was very fast that Pulmu pedalled'

---

[3] Further examples of Finnish DPs, AdjPs and NumPs functioning as manner adverbials can be found in various Finnish grammars. For the Adessive case, see Setälä (1952, 70), Karlsson (1982, 124) and Göran Karlsson (1995); for the Partitive case, Setälä (1952, 56); for the Instructive case, Setälä (1952, 77), Karlsson (1982, 132) and Göran Karlsson (1995); for the Abessive case, Setälä (1952, 80). For the Translative case, see Setälä (1952, 57). For the Allative case, see Setälä (1952, 73); for the Illative case, Setälä (1952, 66). All these cases can also express various other meanings: there exists no one-to-one correspondence between a particular case and meaning.

d. *Kahtasataa Mika Häkkinen ajoi* $t_i$..
'It was 200 kph that Mika Häkkinen was driving'

The data in [1] through [6] allow us to make two generalizations: firstly, Finnish manner adverbials which are realised by nouns, adjectives, and numerals are maximal projections, ie they are either DPs, AdjPs or NumPs, rather than just $N^0$, $Adj^0$ or $Num^0$ heads. Secondly, they always carry an inflectional ending for lexical case, the most frequent lexical case being the Adessive case.

## 4.1.2. Infinitivals (*Infinitiivit*)

Finnish manner adverbials can also be infinitival verbs carrying an inflectional ending for lexical case. The ma-infinitives (ie the 3rd infinitives) inflect for the Adessive or Abessive case, while the ta-infinitives (the 2nd infinitives) inflect for the Instructive case:[4]

(7) a. *Sirkku kävele-e ontu-ma-lla.*
Sirkku-Nom walk-pres/3sg limp-3inf-Adess
'Sirkku walks with a limp'

b. *Sirkku kävele-e ontu-ma-tta.*
Sirkku-Nom walk-pres/3sg limp-3inf-Abess
'Sirkku walks without a limp'

c. *Sirkku kävele-e ontu-e-n.*
Sirkku-Nom walk-pres/3sg limp-2inf-Instr
'Sirkku walks with a limp (ie in such as way that she limps)'

The fact that the adverbials in [7] are able to undergo focus movement suggests that they, too, are maximal projections rather than just nominal or verbal heads:

(8) a. *Ontumalla*$_i$ *Sirkku kävelee* $t_i$.
'It is with a limp that Sirkku walks'

b. *Ontumatta*$_i$ *Sirkku kävelee* $t_i$.
'It is without a limp that Sirkku walks'

---

[4] Further examples and discussion of Finnish manner infinitivals can be found in Setälä (1952, 113ff.), Hakulinen & Karlsson (1979, 385ff.), Karlsson (1983, 181ff.), Göran Karlsson (1995), Vilkuna (1996, 305ff.) and Nikanne (1997, 348ff.). Note that although both [7a] and [7c] contain a manner adverbial, there is a slight difference in their interpretation.

c. *Ontuen*$_i$ *Sirkku kävelee* $t_i$.
'It is with a limp that Sirkku walks'

### 4.1.3. Particles (*Partikkelit*)

On the basis of their distinct inflectional properties, Finnish adpositions and adverbs are particles. Although particles do not normally carry inflectional affixes, there are also some exceptions: in PPs like *sinun takiasi* 'because of you', the preposition *takia* is followed by a possessive suffix *-si*. In sentences like [9a-b], the manner adverbials have the form of more typical PPs:[5]

(9) a. *Pulmu kasvo-i ilman kuri-a.*
Pulmu-Nom grow-past-3sg without discipline-Part
'Pulmu grew up without discipline'

b. *Sparta-ssa lapse-t kasvate-tt-i-in kuri-n kanssa.*
Sparta-Iness children-Nom bring up-pass-past-pass.agr discipline-Gen with
'In Sparta children were brought up with discipline'

Turning now to Finnish adverbs, Setälä (1952, 73) and Vilkuna (1996, 43f.) observe that they can sometimes be followed by "seemingly inflectional case endings:" in constructions like *He kulkivat verka-lle-en* 'They were moving slowly/leisurely' the affix *-lle* is identical to the inflectional ending for the Allative case. [10a-d] provide examples of more typical manner adverbs:

(10) a. *Sirkku saapu-i nopea-sti.*
Sirkku-Nom arrive-past-3sg fast
'Sirkku arrived fast'

b. *Sirkku laulo-i parhai-ten.*
Sirkku-Nom sing-3sg-past best
'Sirkku sang the best'

c. *Sirkku saapu-i ääne-ti.*
Sirkku-Nom arrive-3sg-past sound
'Sirrku arrived without a sound/quietly'

d. *Halua-n lausu-a runo-j-a ruotsalais-ittain.*
Want-1sg-pres recite-inf1 poem-pl-Part Swedish
'I want to recite poems the Swedish way'

---

[5] In Finnish prepositional phrases, the NP complement has an inflectional ending for the Partitive case, and in postpositional phrases, the Genetive case. I will return to the structure of Finnish PPs in Section 4.3.

Laaksonen & Lieko (1992, 117) observe that Finnish manner adverbs are derived from noun and adjectival stems by means of the affixes *-sti, -ten, -ti, -tta* and *-(i)ttain*. As the derivational affix *-tta* is identical to the inflectional ending *-tta* for the Abessive case, the status of elements with *-tta* is ambiguous (ie it is difficult to establish whether they are adverbs which have been formed by means of a derivational affix, or nouns which carry an inflectional ending for Abessive case). But it is evident that even adverbs are maximal projections (AdvPs), rather than just $Adv^0$ heads - [11a-d] show how Finnish adverbs are able to undergo focus movement:

(11) a. *Nopeasti$_i$ Sirkku saapui* $\boldsymbol{t_i}$.
'It was fast that Sirkku arrived'

b. *Parhaiten$_i$ Sirkku lauloi* $\boldsymbol{t_i}$.
'It was the best that Sirkku sang'

c. *Ääneti$_i$ Sirkku saapui* $\boldsymbol{t_i}$.
'It was without a sound that Sirkku arrived'

d. *Ruotsalaisittain$_i$ (minä) haluan lausua runoja* $\boldsymbol{t_i}$.
'It is the Swedish way that I want to recite poems'

## 4.1.4. Conclusion

In this section, we have seen that Finnish manner adverbials are typically realised by nominal and infinitival categories inflecting for lexical case, and by adverbs. We have also seen that we are dealing with maximal projections, ie with DPs, AdjPs, NumPs, InfPs and AdvPs, rather than with just $N^0$, $Adj^0$, $Num^0$, $V^0$ and $Adv^0$ heads. In the following sections, I develop a theory of structural and lexical case which allows us to analyse both nominal and infinitival categories and adverbs/AdvPs uniformly as having the form of K(asus; Kase)Ps. I then show how we are able to extend the feature based systems proposed in Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997) to cover not only adverbs/AdvPs but also the nominal and infinitival categories - I begin by discussing case licensing and case feature checking in bare phrase structure theory and in Government and Binding theory in Section 4.2.

# 4.2. Case Licensing as Movement and Feature Checking

In bare phrase structure, lexical items emerge from the numeration and are inserted into the derivation in their fully inflected forms. This means that all nominal items are fully inflected for structural or lexical case when they enter the derivation. In languages such as Finnish, case is realised as an overt inflectional affix which is associated with case features, whereas in languages such as English and Swedish, case is often "abstract" in the sense that the case features are associated with phonologically zero morphology. But even in English and Swedish, case is overtly marked in some pronouns:[6]

| | | |
|---|---|---|
| (12) a. | *Sirkku-Nom näki Pulmun-Acc* | *Finnish* |
| b. | *Pulmu-Nom näki Sirkun-Acc* | |
| c. | *Hän-Nom näki hänet-Acc* | |
| d. | *Sirkku-Nom saw Pulmu-Acc* | *English* |
| e. | *Pulmu-Nom saw Sirkku-Acc* | |
| f. | *She-Nom saw her-Acc* | |
| g. | *Sirkku-Nom såg Pulmu-Acc* | *Swedish* |
| h. | *Pulmu-Nom såg Sirkku-Acc* | |
| i. | *Hon-Nom såg henne-Acc* | |

Although nominal items are fully inflected for structural or lexical case when they enter the derivation, their case is not necessarily fully licensed. The standard minimalist view is that case is associated with case features which, being uninterpretable, must be checked and eliminated by LF, for LF convergence; all *strong* case features must be checked and eliminated already by Spell-out - otherwise the derivation crashes at PF. Chomsky (1993, 6ff.) argues that in bare phrase structure, case licensing and case feature checking involves a specifier-head

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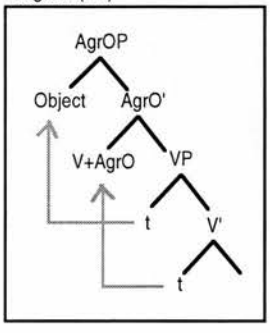
[6] Ie in languages such as Finnish the Accusative case is realised as an overt morphological affix *-n* which is associated with Accusative case features, but in English and Swedish it is realised as a zero morpheme Ø which is associated with the same set of features:

| | | |
|---|---|---|
| *kaku-* | *-n* | *Finnish* |
| [+N] | Accusative case features | |
| *cake-* | *-Ø* | *English* |
| [+N] | Accusative case features | |
| *kaka-* | *-Ø* | *Swedish* |
| [+N] | Accusative case features | |

Note that the term Case, when written with a capital C, refers to the English/Swedish-style abstract case where case features are associated with zero morphology.

(ie a checking) relation between a nominal item α and an appropriate functional Agr head. He further argues that Nominative case is licensed in Spec/AgrSP, while Accusative case is licensed in Spec/AgrOP: the relation between the nominal item and the lexical V is mediated by the appropriate functional Agr head. Diagram (4.1) illustrates, in a simplifed way, how Accusative case licensing by movement and feature checking takes place:[7]

Diagram (4.1)




In the bare theory, case licensing by movement and feature checking only applies to *structural* case. Some earlier theories of phrase structure distinguish between structural and *lexical* case, the difference being that the latter is associated with a thematic role already in the lexicon, rather than in the syntax. The bare theory has little to say about lexical case, but an interesting theory is developed within the GB framework in Holmberg & Platzack (1995).[8] On the basis of Scandinavian languages, they propose that nominal items (Holmberg & Platzack only discuss nominal items which have the form of DPs) are inserted into derivations in their case-inflected forms and the case inflections, or rather the case features associated

[7] For more discussion on case licensing and case feature checking within the bare theory, see Chomsky (1993; 1994; 1995), Lasnik (1993) and Koizumi (1995), among many others. In Chapter Two, I proposed that, rather than *case* features as such, a single morphological case ending could be associated with a number of different features which need checking in the syntax; for example, a nominal item carrying an inflectional ending for Accusative case could be required to enter into a checking relation with an AgrO and an aspectual functional head - I further proposed that AgrOP is a projection in which transitivity-related features are checked, while AspectP is a projection in which aspectual features like [±Completed] are checked. AgrSP was then defined as a projection in which subject-verb agreement (and possibly some kind of EPP) features are checked. Bearing all this in mind, I will continue to talk here about case feature checking or, case-*related* feature checking. I will return to the "true" nature of case(-related) features throughout this and the following sections.

[8] For a more standard GB view on structural and lexical case, see Chomsky (1981, 170ff.; 292ff.) and (1986b, 186ff.) and Lamontagne & Travis (1986; 1987). GB-based accounts of Finnish structural and lexical case can be found in Nelson (1995) and de Hoop (1996). For one of the few minimalist-oriented studies of structural and lexical case, see McGinnis (1998).

with the case inflections, may or may not need checking against the syntactic context. There are two types of checks which Holmberg & Platzack call *lexical check* and *structural check*, respectively.[9] Considering the lexical check first, it involves checking if a DP and a governing lexical head have a matching feature. In Icelandic, Holmberg & Platzack argue, a DP inflecting and carrying a feature for Accusative case is inserted into a structural position in which it is governed by a lexical $V^0$ head also carrying a feature for Accusative case. If the DP needs lexical checking, it must still occupy this position in s-structure. Diagrams (4.2) and (4.3) illustrate the structural positions in which, in Holmberg & Platzack's system, a DP inflecting and carrying a feature for Accusative case can be governed by a lexical $V^0$ also carrying a feature for Accusative case:[10]

Diagram (4.2)

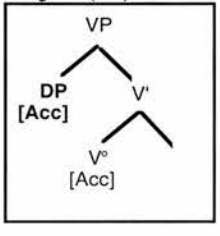
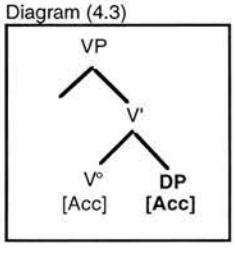



Diagram (4.3)




To take an example of how the system proposed in Holmberg & Platzack (1995) works in practice, in Icelandic a lexical verb such as *keypti* 'buy' can select a DP inflecting and carrying a feature for Nominative or Accusative case as its specifier or complement. All the sentences in [13] from Holmberg & Platzack (1995, 34) pass the lexical check because the DP *einhverjir bátar/ einhverja báta* 'some boats' still appears in its original, lexically governed specifier or complement

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[9] Holmberg & Platzack propose that the terms lexical check and structural check could correspond to case assignment and case licensing. It is important to realise that Holmberg & Platzack's terms lexical case checking and structural case checking do *not* correspond to what we have called lexical case and structural case - as pointed out in Chapter One, I am using these terms only for convenience, without assuming one-to-one correspondence with any particular system. Note that Holmberg & Platzack's definition of structural case checking is not identical to the one in the bare theory. In this sub-section, I will use the term structural case checking only in Holmberg & Platzack's sense.

[10] In Holmberg & Platzack's theory, lexical checking takes place at the level of s-structure. Following Rizzi (1990) Holmberg & Platzack (1995, 25f.) assume that X (head-)governs Y iff X is a head, X m-commands Y, X is ±N, ±V, Agr or T, no barrier intervenes between X and Y and minimality is respected. Under this line of reasoning, the DP can be inserted either into the specifier or complement of X. In the bare theory, the notion of (head-)government is replaced by the notion of domain. Both the specifier and the complement of X are in the domain of X. Note that in the bare theory, checking always involves a specifier-head relation: hence, within this framework Diagram (4.3) cannot illustrate a proper checking configuration at Spell-out.

of V position in s-structure. But the fact that [13a] and [13d] are grammatical whereas [13b] and [13c] are not suggests that lexical checking alone is not enough to license case:

(13) a. *það hafa verið keyptir einhverjir bátar.* *Icelandic*
there have been bought some boats(Nom)

b. **það hafa verið keyptir einhverja báta.*
there have been bought some boats(Acc)

c. **Hún taldi hafa verið keypta einhverjir bátar.*
she believed have been bought some boats(Nom)

d. *Hún taldi hafa verið keypta einhverja báta.*
she believed have been bought some boats(Acc)

Turning now to the structural check, it involves checking if the DP and a functional $F^0$ head have a matching feature. In sentences like [13a-b], Holmberg & Platzack argue, the lexical V *keyptir* raises and adjoins to a functional $F^0$ which is inherently associated with a feature for Nominative case. Hence, in [13a], the Nominative case of the DP *einhverjir bátar* is fully licensed because the DP is governed by a member of a chain headed by an appropriate functional $F^0$. But in [13b], the Accusative case of the DP *einhverja báta* is *not* fully licensed even though it passes the lexical check - this is because the DP is not governed by a member of a chain headed by an appropriate $F^0$. Contrastingly, in sentences like [13c-d], the lexical V *keypta* raises and adjoins to an $F^0$ which is inherently associated with a feature for Accusative case. This means that in [13c], the Nominative case of the DP is not fully licensed because the DP is not in construction with an $F^0$ which is associated with a feature for Nominative case. But in [13d], the Accusative case of the DP is licensed because the DP appears in construction with a functional $F^0$ which is associated with an appropriate feature specification. Diagrams (4.4) and (4.5) illustrate, in a simplified way, how structural checking takes place in Holmberg & Platzack's system:

Diagram (4.4)

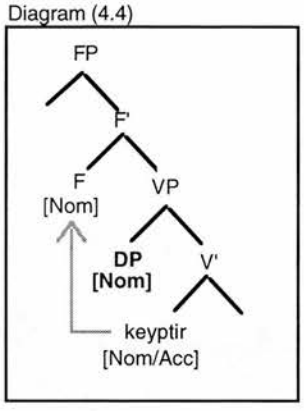
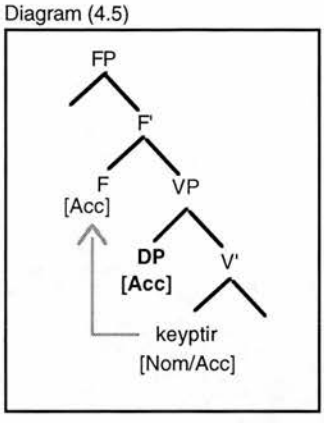



Diagram (4.5)




Not all DPs need both lexical and structural checking, and some DPs do not need either. In Icelandic, *hjálp* 'help' is a verb selecting a DP with Dative case as its specifier or complement. [14a] from Holmberg & Platzack (1995, 29) is grammatical even though the DP *Jóni* has moved and appears in a lexically ungoverned position in s-structure (ie [14a] is grammatical even though it does not pass the lexical check). Holmberg & Platzack take the grammaticality of [14a] and the ungrammaticality of [14b] to indicate that the case of the DP *Jóni,* even though it is not subject to lexical checking, is still subject to *structural* checking: they argue that in Icelandic, subjunctive verbs, but not infinitival verbs, have features which allow them to take part in structural case checking, in the manner described in Diagrams (4.4) and (4.5):

(14) a. *Ég vil að Jóni$_i$ verði hjálpað $t_i$.* *Icelandic*
'I want that Jon(Dat) be(SUBJ) helped'

b. **Ég ætla að Jóni vera hjálpað $t_i$.*
'I want to Jon(Dat) be(INF) helped'

As Holmberg & Platzack point out, the grammaticality of sentences like [15b] suggests that Finnish DPs are not even subject to structural checking - Finnish DPs are able to appear in positions in which the requirement for neither lexical nor structural case checking is satisfied:

(15) a. *Halua-n että Sirku-lle$_i$ laule-ta-an $t_i$.* *Finnish*
Want-pres-1sg that Sirkku-Allat sing-pass-pass.agr
'I want that Sirkku will be sung to'

b. *Halua-n Sirku-lle$_i$ laule-tta-va-n $t_i$.*
Want-pres-1sg Sirkku-Allat sing-pass-1pcp-instr
'I want Sirkku to be sung to'

Holmberg & Platzack argue that, whether a DP needs lexical checking, structural checking, both or neither depends on the types of features on its $D^0$ head. They describe themselves as adopting a version of the KP-hypothesis, according to which case is a functional head selecting an NP or a DP as its complement. But unlike Lamontagne & Travis (1986; 1987), Halefom (1990) and Löbel (1994), they assume that case is represented as a case feature [K] on functional $D^0$, rather than as a separate $K^0$ head projecting to a maximal projection KP. In Holmberg & Platzack's system Finnish, Icelandic and mainland Scandinavian $D^0$ heads have the following types of features:[11]

Diagram (4.6)

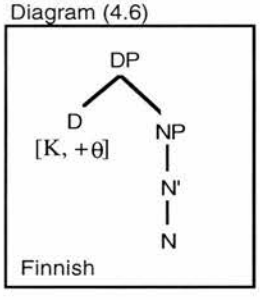



Diagram (4.7)

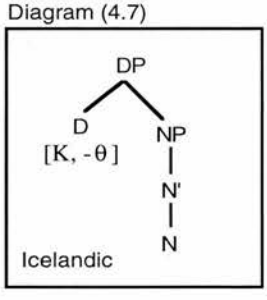
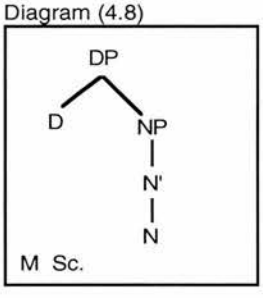



Diagram (4.8)




Because Finnish and Icelandic DPs have a case feature [K] on their $D^0$ head, Holmberg & Platzack (1995, 40) argue that they are "supplied a case value" such as Accusative or Dative inherently, by virtue of moving the $N^0$ head to D containing [K] - as a result, Finnish and Icelandic DPs are not subject to lexical checking and are able to appear in lexically ungoverned positions in s-structure (ie in Finnish and Icelandic sentences like [13a,d] and [14a] are grammatical).[12] But because mainland

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[11] The diagrams in (4.6) through (4.8) are based on Holmberg & Platzack (1995, 39f.). Note that in the bare theory, non-branching projections are disallowed in principle: all unmodified NPs are treated as being both minimal and maximal. Note also that in Holmberg & Platzack's system the feature [K] on D has no values [+K] and [-K]. Although it is unclear what the values [+K] and [-K] would mean in their system, one could try to build a theory in which Finnish and Icelandic have the feature [+K], languages such as Färöese have the feature [-K], and Swedish, Danish and Norwegian have no [K] at all. Motivation for this could come from the fact, observed by Holmberg & Platzack, that Färöese case is somehow "weaker" than Finnish and Icelandic case but "stronger" than mainland Scandinavian case.

[12] This is where Holmberg & Platzack's interchangeable use of the terms case checking and case assignment gets confusing. Their claim that a DP is supplied a case value inherently means that lexical case checking can take place DP internally, by moving the $N^0$ head to D containing [K] so that the maximal projection DP has no case feature left which would need checking against the lexical environment in s-structure. Hence, the DP is not subject to lexical case checking in s-structure. If a DP is "supplied a case value by reference to a governing lexical head," it still has a case feature which needs checking against the lexical environment in s-structure: the DP is still subject to lexical case checking and must appear in a lexically governed position in s-structure.

Scandinavian DPs lack a case feature [K] on their $D^0$ head, they must be supplied a case value by reference to a governing lexical head; thus, mainland Scandinavian DPs are subject to lexical checking and can only appear in lexically governed positions in s-structure (ie in mainland Scandinavian, sentences like [13a,d] are grammatical but sentences like [14a] are not).

Holmberg & Platzack (1995, 40) further argue that in Finnish, but not in Icelandic, functional $D^0$s contain a feature [+θ] which supplies DPs with an "inherent theta role." As a result, Finnish DPs are not subject to structural checking either and show "a freedom of distribution corresponding to that of PPs." This explains the difference in grammaticality between the Icelandic [14b] and the Finnish [15b] - although the discussion in Holmberg & Platzack is very sketchy, it seems that they are trying to relate structural case checking to theta role assignment, in the sense that the functional head transmits not only the case but also the theta role assigned by the lexical V to DP. If Finnish DPs are supplied a case value and a theta role inherently, the proposal that they are exempt from both lexical and structural checking makes intuitive sense; there is no need for an $F^0$ to transmit a theta role to a DP which already has a theta role, by virtue of its own $D^0$ head containing a "theta role assigning" feature [+θ].

Although only some part of Holmberg & Platzack's theory has been presented above, this brief presentation includes ideas most relevant to my purposes. To begin with, I hypothesize that the distinction between structural and lexical case corresponds to the types of (case; case-related) features contained in the inflectional affixes, in the sense that the affixes for structural case are associated with different types of features than the affixes for lexical case. Secondly, it corresponds to the in/ability of functional $D^0$ or $K^0$ heads to check these features DP- or KP-internally. In line with Holmberg & Platzack, I propose that, if a functional $D^0$ or $K^0$ is able to check all case (or, case-related) features DP-/KP-internally, its maximal projection is exempted from further case(-related) feature checking. Note, though, that I do *not* adopt Holmberg & Platzack's system of structural and lexical case checking (or their use of these terms) as such; instead, I develop a version of it which is more in line with the minimalist assumptions. Thirdly, in Holmberg & Platzack's system, we have seen that a DP inflecting and carrying a feature for Accusative or Dative case is always inserted into the derivation as a specifier or complement of a $V^0$ head which carries a matching feature for Accusative or Dative case. Although Holmberg & Platzack do not address the question why this should be so in any detail, the idea that a DP can only be inserted into a position in which its features can be checked against the corresponding features on the selecting $X^0$

head is of direct relevance. In particular, if we assume, contra Chomsky (1993; 1994; 1995) and related work, that a specific type of feature checking can take place at the point of merge, then it can provide us with a powerful way of ensuring that nominal items are merged into the correct positions in the derivation. The idea that feature checking can also be a property of the position of merge is of importance to the system of structural and lexical case developed in the following sections.

# 4.3. Structural and Lexical Case in Finnish

## 4.3.1. A Theory of Structural and Lexical Case

Nominal items are fully inflected for structural or lexical case when they emerge from the numeration and enter the derivation. In this sub-section, I propose that inflectional endings for structural or lexical case are associated with both a case and a semantic (thematic, interpretive) feature which need checking in the syntax. I discuss the case feature first, hypothesizing that a nominal item carrying an inflectional ending for structural case is associated with a different case (or, case-related) feature than a nominal item carrying an inflectional ending for lexical case. As a result, nominal items with structural case are subject to checking in a different way, and against different types of functional heads, than nominal items with lexical case. I return to the semantic (thematic; interpretive) feature [σ] in Sub-section 4.3.1.2.

### 4.3.1.1. The Case Features [C] and [K]

Nominal items such as the Finnish *kive-n* 'stone-Acc' and *kive-llä* 'stone-Adess' emerge from the numeration in their fully inflected forms and containing features which need checking in the syntax. I hypothesize that nominal items like *kiven,* because they inflect for structural Accusative case, contain a case feature [C] whereas nominal items like *kivellä*, because they inflect for lexical Adessive case, contain a case feature [K]. The features [C] and [K] can have different *values:* in Finnish, [C] can have values like [Nominative], [Genetive], [Accusative] and [Partitive], ie the structural cases, whereas [K] can have values like [Adessive],

[Abessive], and [Instructive], ie the lexical cases:[13]

| | |
|---|---|
| *kive-* | *-n* |
| [+N] | [C: Accusative] |
| | |
| *kive-* | *-llä* |
| [+N] | [K: Adessive] |

Within the bare theory, *kiven* and *kivellä* are treated as both minimal and maximal (ie as $N^0$s and NPs). In line with the normal assumptions, I propose that they are selected by functional $D^0$s as their complements so that they come to have, at least initially, the form of DPs:[14]

Diagram (4.9)

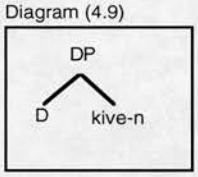
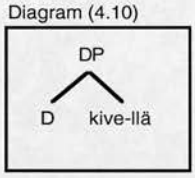



Diagram (4.10)




Functional $D^0$s are associated with a categorial feature [+N] and interpretive features [±Referential] and [±Definite]. This allows them to attract nominal heads and to drive their movement, either overtly or covertly, to D - cf. Laka (1993), Longobardi (1994) and Chomsky (1995). Because the nominal head containing the inflectional ending for structural or lexical case raises to D, I hypothesize that the case feature [C] or [K] and its value comes to be associated with the maximal projection DP as a whole; in other words, the case feature and value of the complex

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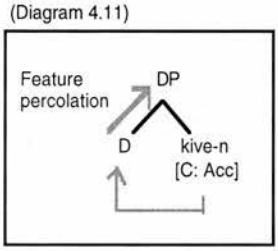
[13] In actual fact, I assume that a single feature and value like [C: Accusative] could stand for a set of features, including the aspectual and the transitivity-related feature - I will return to this briefly.

[14] Although Finnish lacks articles, it has various other types of determiners which function as $D^0$ heads and support the DP analysis; also the fact that $D^0$, even though it often lacks overt phonological realisation, is associated with interpretive features like [±Referential] and [±Definite] supports its presence in Finnish. Finnish DPs are thought to have a fully developed internal structure consisting of an $NP/N^0$ and at least a functional AgrP. The DP-internal AgrP is responsible for the checking of case and number agreement features between the head noun and its adjectival modifier (cf. Chapter One): essentially, the noun raises to the head and its adjectival modifier raises to the specifier, of each DP-internal functional projection, for feature checking. For more discussion on the DP-hypothesis and the internal structure of DPs, see Taraldsen (1990), Ouhalla (1991), Ritter (1991), Cinque (1994), Longobardi (1994), Szabolczi (1994), Radford (1997, 157ff.) and Siloni (1998). For discussion on the internal structure of Finnish DPs, see Douglas-Brown (1996) and Vainikka (1996).

$N^0$+$D^0$ head percolates to the maximal projection DP so that it is visible to the computational system of language on the DP - a more detailed discussion on feature percolation mechanisms can be found in Lieber (1992), among others:

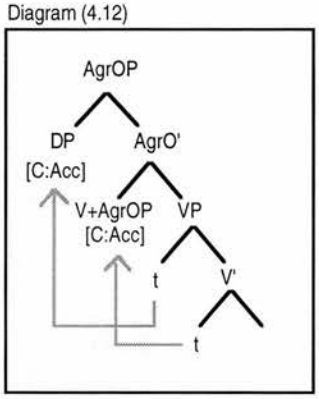
(Diagram 4.11)




On the assumption that nominal items carrying an inflectional ending for structural and lexical case are associated with different types of case features, ie with [C] and [K] respectively, I hypothesize that they are subject to checking against different types of elements in the syntax. I begin by discussing structural case first: the case feature [C] and its values. There are two ways in which the case feature [C] and its values can be checked in the syntax: against an appropriate Agr or aspectual functional head, and against a functional $P^0$ head. Considering checking against an Agr or aspectual functional head first, I propose, much in line with Chomsky (1993; 1994; 1995), Lasnik (1993), Koizumi (1995) and related work, that the maximal projection DP is attracted and raises from its original position of merge to the specifier, while the lexical V raises to the head, of an appropriate functional Agr projection. The DP and the complex V+Agr head must have a matching case feature and value: if the DP is associated with a feature for Accusative case, the complex V+Agr head must also be associated with a feature for Accusative case. If the features and values of the DP and the complex V+Agr head do not match, the derivation continues to contain uninterpretable features and crashes at the interface levels - in Section 4.2. we illustrated the way in which a feature for Accusative case is checked in a functional AgrO projection in the following way (irrelevant details omitted):[15]

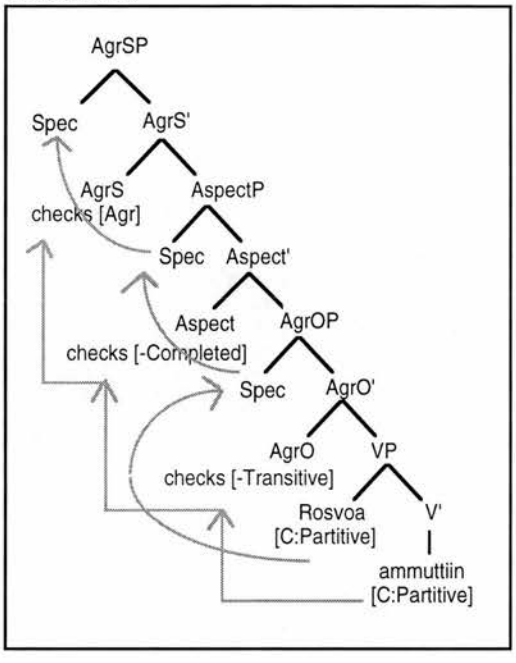
[15] In Finnish, we are dealing with a *strong* feature on the complex AgrO head so that movement to AgrOP is always overt movement. This means that, if the features and values of the DP and the complex AgrO head do not match, the derivation crashes both at PF and LF. In some languages, we are dealing with a *weak* feature. Because weak features involve covert (post-Spell-out; feature) movement, the derivation crashes only at LF. In Finnish, the complex AgrO head continue movement to AgrS, producing the correct linear ordering VO.

Diagram (4.12)




However, in Chapter Two we have seen that a single inflectional case ending could be associated with a number of different features, including a transitivity-related feature, an aspectual feature, and a subject-verb agreement feature, all of which need checking in an appropriate functional projection. I hypothesize that, when one of these features has been checked via movement to a functional projection, the others are still available to the computational system of language, driving movement of the nominal item to another case-related functional projection. This means that, under the line of reasoning pursued here, a nominal item α *can* sometimes move in order to enter into multiple case-related checking relations with a number of heads - but even here the important point is that α cannot move to check the same case-related feature twice. In other words, once the transitivity-related feature of α has been checked in an appropriate functional projection, this feature can no longer be accessed by the computational system of language so that it would drive further movement of α to another case-related functional projection. Instead, I hypothesize that the movement of α from one case-related functional projection to another (eg from Spec/AgrOP to Spec/AspectP, and from Spec/AspectP to Spec/AgrSP) is always driven by a need to check *different* case-related features which just happen to be associated with a single morphological case ending. Diagram (4.12) illustrates the way in which case-related feature checking takes place in a construction like *Rosvo-a ammu-tt-i-in* 'Robber-Part shoot-pass-past-pass.arg ie The robber was shot' - I assume that a single feature and value [C:Partitive] consists of at least the features [-Completed], [-Transitive] and [Agreement] which are checked by virtue of overt movement to AgrO, Aspect and AgrS projection, respectively (irrelevant details omitted):

Diagram (4.13)




In the discussion so far, we have looked at case-related feature checking against an Agr or an aspectual head. However, the case feature [C] and its values can also be checked in another way: against a functional $P^0$ head. Much in line with Grimshaw (1991) and Haeberli (1998), I propose that $P^0$ is a functional head selecting a DP as its complement, projecting into a full maximal projection PP. I assume that Finnish PPs such as *kuri-n kanssa* 'discipline-Gen with' and *ilman kuri-a* 'without discipline-Part' have the following pre-movement structures:[16]

Diagram (4.14)

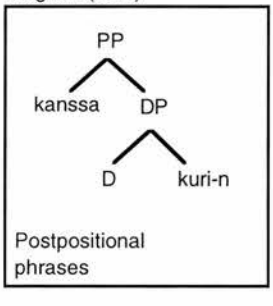
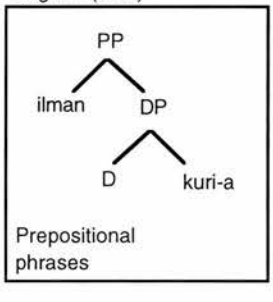



Diagram (4.15)




These structures are compatible with the LCA in that the $P^0$ heads precede their DP

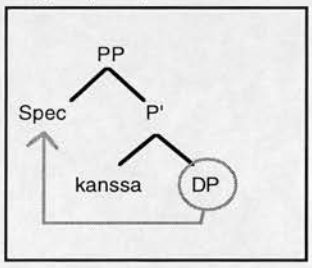
[16] Grimshaw (1991) treats PPs as maximal extensions of a nominal head (ie as maximal extended projections of a nominal head; the outmost layers of a nominal projection) and speaks of nouns projecting to DP and to PP although, in actual fact, the $D^0$ head selects the $NP/N^0$ as its complement and is the projecting head, and the $P^0$ head selects the DP as its complement and is the projecting head. Extended phrasal projections are also discussed in Abney (1987) and Barton (1990).

complements. According to Kayne (1994, 46ff.), the correct linear ordering in postpositional phrases is a result of moving the DP overtly into the specifier of the postpositional or of some higher phrase - although it is not evident from the discussion in Kayne what this higher phrase might be, one could assume that there is a light p projection on top of the PP, much in the same way as there is a light v projection on top of a lexical VP. Radford (1997, 449f.) proposes that there is both a light p and an Agr projection on top of the PP - the DP then raises, either overtly or covertly, to Spec/AgrP and possibly also to Spec/pP while $P^0$ raises and adjoins to $Agr^0$ and $p^0$:

$[_{AgrP}\ [_{pP}\ [_{PP}\ [_{DP}\ [_{NP}\ \cdots\ ]]]]]$

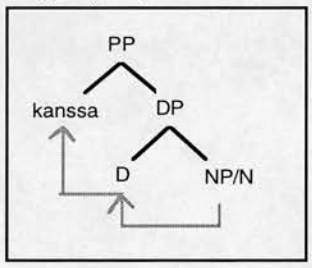
In the present thesis, we could assume, in keeping with Kayne (1994) and Radford (1997), that Finnish postpositional phrases like *kurin kanssa* involve overt movement while prepositional phrases like *ilman kuria* involve covert feature movement, of the DP complement to Spec/PP. Alternatively, we could assume, much in line with Law (1998) and van Riemsdijk (1998), that Finnish postpositional phrases involve overt head-to-head movement and adjunction of the nominal head to D, and of the resulting complex $N^0$+$D^0$ head to P, while in prepositional phrases only the features of the complex $N^0$+$D^0$ head raise to P. Diagrams (4.16) and (4.17) illustrate the way in which overt movement would take place within these two views, producing the correct linear ordering *kurin kanssa:*[17]

Diagram (4.16)




OR

Diagram (4.17)




I hypothesize that the feature which drives the movement of the DP to Spec/PP, or the movement of the complex $N^0$+$D^0$ head to P, is the case(-related) feature [C]. In

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[17] On the basis of French data, Law (1998) proposes that $D^0$ heads raise and adjoin overtly to $P^0$, resulting in the following structure:

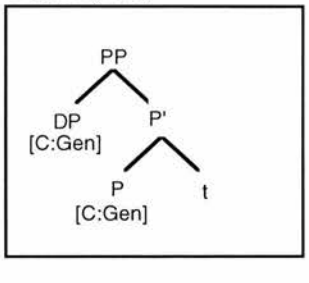
$[_{PP}\ [P^0+D^0_i\ [_{DP}\ [\ t_i\ [_{NP}\ [\ N^0\ ]]]]]]$

This structure, because it allows adjunction to the right, is not in keeping with standard bare phrase structure theory. Head-to-head movement and adjunction is also discussed in Halefom (1990) and Löbel (1994).

other words, Finnish postpositional heads contain a strong feature [C] which allows them to attract a corresponding feature on the DP, pied-piping the entire DP to Spec/PP, in a manner illustrated in Diagram (4.16). Alternatively, they contain a strong feature [C] which allows them to attract a corresponding feature on the complex $N^0$+$D^0$ head, pied-piping the entire $N^0$+$D^0$ to P, in a manner illustrated in Diagram (4.17). Turning now to Finnish prepositional heads, I propose that they contain a *weak* feature [C] which allows the *features* of the DP to raise or, alternatively, the features of the complex $N^0$+$D^0$ head to raise, after the operation Spell-out. The important point is that, within both lines of reasoning, all case(-related) feature checking can take place PP-internally; because all case(-related) features can be checked, and possibly also deleted, PP-internally, a maximal projection PP can never be associated with features which would require further checking in an Agr or Aspect projection (cf. the cyclic movement of DPs to Spec/AgrOP, Spec/AspectP and Spec/AgrSP discussed earlier) - this means that a PP is allowed to remain in its original position of merge at the interface levels (note, though, that a PP can still be associated with features like [+Wh] which allow it to be attracted by a [+Wh] C head and which drive its movement, overtly or covertly, to Spec/CP).

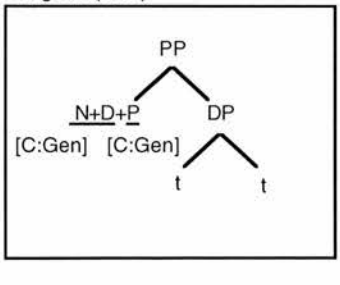
The DP or the complex $N^0$+$D^0$ and the functional $P^0$ must have a matching feature and value: a DP or a complex $N^0$+$D^0$ head which is specified [C: Genetive] can only check its features against a functional $P^0$ which is also specified [C: Genetive] - a feature and value such as [C:Genetive] could again stand for various types of features so that, rather than case features as such, "case feature checking" against a functional $P^0$ head involves the checking of aspectual, agreement, and some other types of features. In Finnish postpositional phrases, the DP or the complex $N^0$+$D^0$ head must always inflect and carry a feature for Genetive case, and in prepositional phrases, for Partitive case - this suggests that Finnish $P^0$ heads can only be specified [C:Genetive] or [C:Partitive] when they emerge from the numeration:

Diagram (4.18)




OR

Diagram (4.19)




But which of these configurations describes the correct state of affairs?

Although both lines of reasoning have been argued for in the literature, I propose that the one illustrated in Diagrams (4.16) and (4.18) results in a more uniform and economical theory. It is also supported by more empirical evidence. First of all, it allows us to hold on to the idea presented above that DPs are associated with a case feature by virtue of **(A)** overt or covert head-to-head movement of the $N^0$ head to D and **(B)** feature percolation from the complex $N^0$+$D^0$ head to the maximal projection DP. Thus, we are able to generalize that having a case feature which needs checking in the (overt or covert) syntax is a property of DPs, rather than a property of NPs or $N^0$s.

Secondly, it provides a more economical account of the word order facts in postpositional phrases:

(16) a. *kova-n spartalaise-n kuri-n kanssa* *Finnish*
strict-Gen Spartan-Gen discipline-Gen with
'with strict Spartan discipline'

b. *ilman kova-a spartalais-ta kuri-a*
without strict-Part Spartan-Part discipline-Part
'without stict Spartan discipline'

It has been shown that adjectival modifiers of $N^0$ heads are merged as specifiers of N or some D-internal functional heads so that we are dealing with the following types of (pre-movement) structures - cf. Ouhalla (1991), Ritter (1991), Cinque (1994), Longobardi (1994), Szabolczi (1994), Stavrou (1995), Douglas-Brown (1996), Vainikka (1996), and Siloni (1998):

$[_{DP}$ D $[_{FP}$ AP $[_{F'}$ F $[_{FP}$ AP $[_{F'}$ F $[_{NP}$ *kovan* $[_{N'}$ N $[_{NP}$ *spartalaisen* $[_{N'}$ *kurin* ]]]]]]]]]

In the system illustrated in Diagrams (4.16) and (4.18), the adjectival modifiers *kovan* and *spartalaisen* are able to move as parts of the DP to the specifier of PP so that they end up preceding the functional $P^0$, producing the correct linear ordering $[_{DP}$ *kovan spartalaisen kurin*$]_i$ *kanssa* $t_i$. But in the system illustrated in Diagrams (4.17) and (4.19), we have to assume a large number of functional projections on top of the PP, in order to get the correct linear ordering: each adjectival modifier must move singly to the specifier of an appropriate functional projection. So, while in the former system we are able to get away with just one overt application of the

operation Move, in the latter we have to assume several overt applications of it.[18]

Further arguments for preferring the system illustrated in Diagrams (4.16) and (4.18) come from constructions involving [+Wh] features and movement to Spec/CP: [17b-c] show how in Finnish Wh-constructions, even postpositional phrases involve (and actually even prefer) overt movement of the DP complement to Spec/PP. The maximal projection PP then moves, as a whole, to Spec/CP:

(17) a. *$[_{PP}\,[_{DP}$ Miten kova-n kuri-n$]_i\,[_{P'}$ kanssa $t_i\,]]_k$ Sirkku kasvoi $t_k$ ?*
how strict-Gen discipline-Gen with Sirkku-Nom grow-past-3sg
'With how strict discipline did Sirkku grow up'

b. *$[_{PP}\,[_{DP}$ Miten kova-a kuri-a$]_i\,[_{P'}$ ilman $t_i\,]]_k$ Sirkku kasvoi $t_k$ ?*
How strict-Part discipline-Part without Sirkku-Nom grow-past-3sg
'Without how strict discipline did Sirkku grow up'

c. *?$[_{PP}\,[_{P'}$ Ilman $[_{DP}$ miten kova-a kuri-a $]]]_k$ Sirkku kasvoi $t_k$ ?*
How strict-Part discipline-Part without Sirkku-Nom grow-past-3sg
'Without how strict discipline did Sirkku grow up'

In the preceding discussion, we have looked at Finnish structural case: we have seen how the case feature [C] and its values can be checked in the syntax against an appropriate complex Agr or aspectual head or, if we are dealing with Genetive or Partitive case, against a functional $P^0$ head. We have also discussed the idea that, rather than case features as such, "case feature checking" could involve the checking of transitivity-related, aspectual, and agreement features. Let us now move on to look at Finnish *lexical* case: the case feature [K] and its values. I hypothesize that the case feature [K] and its values can be checked in the syntax in only one way: against a functional K(asus; Kase) head. I am adopting a version of the KP-hypothesis, in assuming that lexical case involves a functional $K^0$ selecting a

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[18] Note that in Finnish, if a nominal head is modified by a relative clause, then that relative clause can usually either precede of follow the functional P:

(i) *??kovan kurin joka saa polvet tutisemaan kanssa*
'strict discipline which makes the knees go wobbly with'

(ii) *?kovan kurin kanssa joka saa polvet tutisemaan*
'strict discipline with which makes the knees go wobbly'

According to Kayne (1994) the functional D selects a CP, rather than and NP, as its complement, and the NP *kovan kurin* appears in the specifier of this CP. In (i) we could assume that the DP containing the CP undergoes movement to Spec/PP whereas in (ii) we could assume, in keeping with Kayne, that, even though the NP *kovan kurin* has raised to some DP internal position and the maximal projection DP as a whole has raised to Spec/PP, the rest of the CP is somehow stranded in place. As the focus of this thesis is not on Finnish relative clauses, I will not discuss this in more detail.

DP as its complement, projecting to a full maximal projection KP:[19]

Diagram (4.20)

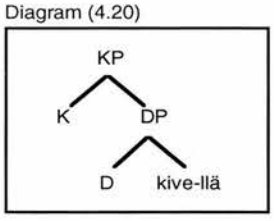
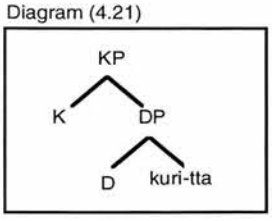
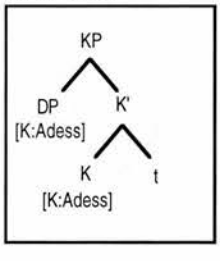



Diagram (4.21)




The nominal head is attracted by and raises to D, to check features like [±Definite] and [±Referential]. Unchecked features, including the feature [K], of the complex $N^0$+$D^0$ head percolate to the maximal projection DP, in a manner illustrated in Diagram (4.11). The DP is selected by a functional $K^0$ as a complement - I propose that a functional $K^0$ contains a feature [K] which allows it to attract a DP which is associated with a matching feature and value; this means that the feature [K] of DP can be checked KP-internally, by means of raising the DP to Spec/KP, in exactly the same way as the feature [C] of DP can be checked PP-internally, by virtue of raising the DP to Spec/PP. Because all case (or, case-related) features are checked KP-internally, a maximal projection KP does not have any features left which would need further checking in a Spec/AgrP or Spec/AspectP position - this then means that a maximal projection KP, just like a maximal projection PP, is allowed to remain in its original position of merge at the interface levels (unless it is associated with features like [+Wh] which drive its overt or covert movement to a derived A'-position). Compare the situation illustrated in Diagram (4.22) to the one illustrated in Diagram (4.18):

Diagram (4.22)




But given that Finnish $K^0$ heads lack an overt phonological realisation, how do we know that they are really there? How do we know, for example, that [K] is not merely a feature on a functional $D^0$, as suggested by Holmberg & Platzack (1995), so that lexical case feature checking takes place DP-internally, making the maximal

[19] For the KP-hypothesis, see eg Emonds (1985), Lamontagne & Travis (1986; 1987), Halefom (1990) and Löbel (1994). Relevant discussion can also be found in Larson (1985) and Emonds (1987).

projection DP exempt from further case feature checking in a functional Agr or aspectual projection? There are both empirical and theory internal reasons for assuming that [K] is a feature on a functional $K^0$ projecting to KP, rather than on a functional $D^0$. Firstly, as pointed out by Emonds (1985; 1987), a functional head which is phonologically empty can have its positively specified inherent features phonologically realised inside its sister phrase. Emonds (1987, 615) proposes an Invisible Category Principle which states that

> a closed category B with positively specified features $C_i$ may remain empty throughout a syntactic derivation if the features $C_i$ (save possibly B itself) are all alternatively realized in a phrasal sister of B.

Diagrams (4.20) and (4.21) show that DP is a phrasal sister of $K^0$ - given Emond's Invisible Category Principle, the features associated with $K^0$ can be realised in DP. Although this principle predates bare phrase structure theory, we can assume, in line with normal minimalist assumptions, that the overt case-inflected form of the DP provides evidence for the existence of the functional $K^0$ which is missing from the head's side - under this line of reasoning, the lexical case of the DP is the overt manifestation of the presence of the $K^0$ head. In the same way, we argued earlier that a particular structural case of a DP can be the overt manifestation of a particular type of clausal functional head; the Accusative-Partitive alternation on the internal argument of V was taken to provide evidence for the existence of an aspectual clausal functional projection which, in Finnish, is missing from the head's side (cf. also the discussion in Reime (1993)).

Secondly, if [K] was merely a feature on a functional $D^0$, as proposed by Holmberg & Platzack, we would be forced to conclude that there exist at least two different types of functional $D^0$s: some would be associated with a case(-related) feature, others would not. As a result, some DPs would be able to have their features checked DP-internally, while others would still need to have them checked by means of movement to an appropriate Spec/AgrP, Spec/AspectP or Spec/PP. So the assumption that [K] is merely a feature on a functional $D^0$ would not really buy us anything - rather, it would make our theory more complicated because we would have to introduce various types of $D^0$ heads and DPs. If, on the other hand, we continue to assume that functional $D^0$s are not associated with case(-related) features, we are able to conclude that a maximal projection DP is associated with such features by virtue of feature percolation from its complex $N^0$+$D^0$ head to DP, and that these features need to be checked in an appropriate functional projection (ie in an appropriate functional AgrP, AspectP, PP or KP).

Thirdly, there are important similarities between functional $K^0$s and $P^0$s which support the analysis of $K^0$s as independent functional heads, rather than as a feature [K] on $D^0$. In the system developed here, the way in which the feature [K] of DP is checked against a corresponding feature on a functional $K^0$ is analogous to the way in which the feature [C] of DP is checked against a corresponding feature on a functional $P^0$. I hypothesize that $K^0$ and $P^0$ are similar types of functional heads in Finnish, apart from that fact that $K^0$s are specified [K] and [-phonetic], while $P^0$s are specified [C] and [+phonetic]. Instead of calling these heads K and P, we could, in fact, introduce a new label covering both of them, the difference being that "K" heads have the feature specification [K] while "P" heads have the feature specification [C]. This line of reasoning is close to that pursued in Nikanne (1993) - working within the Government and Binding framework, he argues that Finnish nominal items inflecting for lexical case involve phonologically empty prepositions assigning lexical case to their DP complements, much in the same way as Finnish nominal items inflecting for structural Genetive or Partitive case involve phonologically overt prepositions assigning these cases to their DP complements. Nikanne's view of Finnish nominal items with lexical case and PPs is illustrated in Diagrams (4.23) and (4.24) - his analysis supports the view that the labels KP and PP could be replaced by a single label covering both of them, so that the difference between "KPs" and "PPs" is merely a difference in the feature specification of their $X^0$ heads. In Diagrams (4.23) and (4.24), the label covering both "KPs" and "PPs" is PP:[20]

Diagram (4.23)

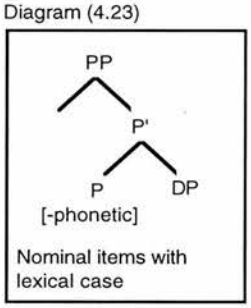
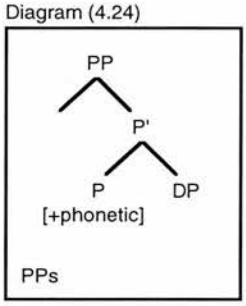



Diagram (4.24)




Summarising, in this sub-section I discussed Finnish nominal items inflecting for structural and lexical case. I proposed that nominal items with structural case are associated with a case feature [C] which can be checked in an appropriate Agr, Aspect or P projection, by moving the nominal item (ie the DP) to Spec/AgrP, Spec/AspectP or Spec/PP, while nominal items with lexical case are

[20] For a similar view on phonologically empty P heads with regard to case assignment, see also Emonds (1987) and Laenzlinger (1998, 262ff.).

associated with a case feature [K] which can only be checked in an appropriate K projection, by virtue of moving the nominal item to Spec/KP. I also hypothesized that a single case feature and value can stand for a bundle, or a set, of features, each of which needs checking in an appropriate functional projection. In other words, a single inflectional case ending can be associated with one or more case-related features, including, for example, transitivity-related, aspectual and subject-verb agreement features. I proposed that, when one of these features has been checked in an appropriate functional projection, the others are still available to the computational system of language, driving movement of the DP to yet another case-related functional projection. I also discussed the idea that $P^0$ and $K^0$ are similar types of functional heads, apart from the fact that $P^0$s are specified [C] and [+phonetic] while $K^0$s are specified [K] and [-phonetic]. In the next sub-section, I will take the idea that a single inflectional case ending can be associated with a bundle, or a set, of features which need checking in the syntax even further - in particular, I will discuss the role of the semantic (thematic; interpretive) feature [σ].

### 4.3.1.2. The Semantic/Thematic Feature [σ]

In the previous sub-section, I proposed that a single morphological case ending can be associated with a number case-related features, so that a single nominal item α is required to enter into multiple case-related checking configurations with a number of different heads. However, all the features discussed so far drive (overt or covert) movement, so that all case-related feature checking takes place in a derived position. In this sub-section, I hypothesize that a single morphlogical case ending is associated not only with a case feature [C] or [K] - and whatever these features now stand for - but also with a semantic (thematic; interpretive) feature [σ]. I argue that this feature percolates the maximal projection DP, PP, or KP as a whole, and is checked at the point of merge, when the DP, PP, or KP enters the derivation as a specifier of V or functional head, against the corresponding feature on the V or functional head. In other words, I define semantic (thematic; interpretive) feature checking strictly as a property of the position of merge, so that its purpose is to ensure that a nominal item α is always merged into the correct position in the derivation. The idea that features can be checked also at the point of merge, so that the features in question do not drive movement, is also presented elsewhere - see eg the discussion in Borer (1998) and Haeberli (1998). Crucially, the feature based theories of adverbials proposed by Laenzlinger (1996; 1998), Alexiadou (1997), and

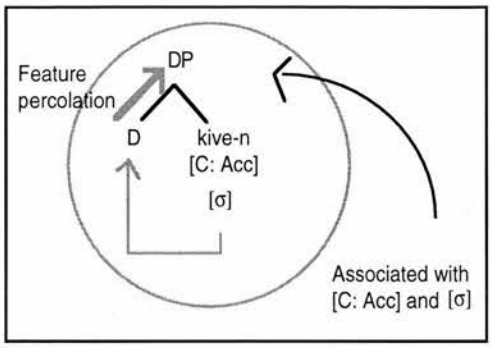
Cinque (1997) are largely based on the idea that, when an adverbial α is merged as a specifier of V or, as a specifier of a functional head, there must be feature checking or feature matching between α and the V or functional head - this ensures that α is merged into the correct structural position.

Because both case and semantic features are ultimately associated with an inflectional ending for structural or lexical case, we are dealing with the following type of situation:

| | |
|---|---|
| *kive-* | *-n* |
| [+N] | [C: Accusative] |
| | [σ] |
| *kive-* | *-llä* |
| [+N] | [K: Adessive] |
| | [σ] |

In the previous sub-section, we have seen that nominal heads are attracted by and raise to D. Because D is unable to check any case-related features, they percolate to the maximal projection DP, in a manner illustrated in Diagram (4.11). The DP can then enter the derivation as a specifier of V, and it can be attracted by an Agr or an aspectual head so that the case-related features of DP are checked in a specifier-head relation with a complex Agr or aspectual functional head, in a manner illustrated in Diagrams (4.12) and (4.13). Alternatively, the DP can be selected by a functional $P^0$ or $K^0$ as a complement so that its case-related features are checked PP- or KP-internally, by virtue of overt or covert movement of DP (or its features) to Spec/PP or Spec/KP. I now propose that, just as a functional $D^0$ cannot check the feature [C] or [K] of the nominal head which raises and adjoins to it, it is also unable to check its semantic feature [σ]. This means that a maximal projection DP is associated not only with a case feature [C] or [K] but also with a semantic feature [σ], by virtue of feature percolation from its complex $N^0$+$D^0$ head to DP. Diagram (4.25) shows how the semantic feature [σ] of DP is essentially the same as the semantic feature [σ] of NP/$N^0$ when the NP/$N^0$ emerges from the numeration:

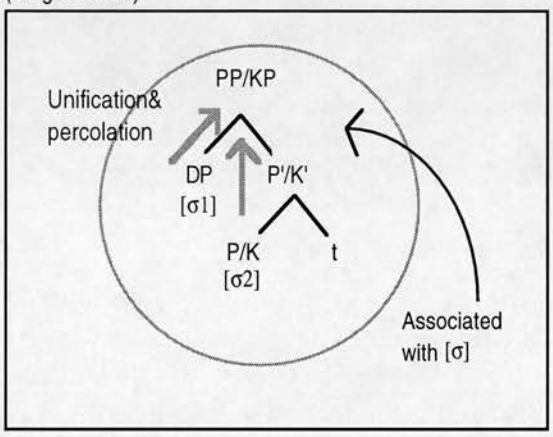
(Diagram 4.25)




Although Finnish $P^0$ and $K^0$ heads are able to check the case-related feature and value of the DP that raises to their specifier position, I propose that they, just as the functional $D^0$s, are unable to check their *semantic* features. However, this does not mean that functional $P^0$s and $K^0$s *lack* semantic features altogether: instead, because both $P^0$ and $K^0$ are functional heads, it is reasonable to suppose that they, just like functional Tense/Mood and Aspect heads, can be associated with a semantic content. However, I hypothesize that, although Finnish $P^0$ and $K^0$ heads can be associated with a semantic content, expressed in terms of a semantic feature [σ], when they emerge from the numeration, this is not the *same* feature as the semantic feature [σ] of the DP which raises to their specifier position (and, as we have just seen, the semantic feature [σ] of DP is essentially the same as the semantic feature [σ] of $NP/N^0$ when the $NP/N^0$ emerges from the numeration) - for clearness' sake, I will refer to the semantic feature of functional $P^0$ and $K^0$ heads as [σ2], and to the semantic feature of DPs as [σ1]. Another alternative would be to assume, much in line with Cann (1993), that the feature [σ2] of $P^0$ and $K^0$ heads is a kind of variable value which needs to be instantiated during the course of the derivation, while the feature [σ1] of DP contains a variable feature value - note, though, that this line of reasoning would not be in keeping with the idea that, because they are functional heads, $P^0$ and $K^0$ are associated with a semantic content. The important point is, however, that under both lines of reasoning, [σ2] and [σ1] must be allowed to unite so that the resulting feature [σ] is fully instantiated, and has properties (or, in this case, a semantic content or interpretation) which differ(s) from the properties (or, from the semantic content) of its two parts. In other words, the two features [σ2] and [σ1] of the $P^0$ and $K^0$ head and the DP must be allowed to unite, so that the semantic feature [σ] which is associated with the maximal projection PP or KP as a whole, is really a combination or a union of the two features [σ2] and [σ1]. And because [σ] is a union of [σ2] and [σ1], it has properties (or, an interpretation) which differ(s) from the properties of both [σ2]

and [σ1]. Note that the unification operation is obligatory - the semantic feature checking operation which applies at the point of merge, when the PP or KP enters the derivation, is not able to "see" the two distinct features [σ2] and [σ1] contributed by the functional $P^0$ or $K^0$ head and the DP. So, while Diagram (4.25) illustrates the structure of DPs, Diagram (4.26) illustrates the structure of PPs and KPs (irrelevant details omitted):[21]

(Diagram 4.26)




In the discussion so far, we have looked at the way in which Finnish DPs, PPs and KPs come to be associated with a semantic feature [σ] - ie with a semantic/thematic interpretation. But very little has been said about the way in which this feature is checked in the syntax. On the basis of Holmberg & Platzack's theory of lexical checking (cf. the discussion in sub-section 4.2), I propose that semantic feature checking involves a nominal item α which is associated with a semantic feature [σ] being merged as a specifier of an $X^0$ head which is associated with a corresponding semantic feature [σ]. The derivation converges iff α and $X^0$ have a matching feature and value and crashes (or, is cancelled) if they do not. On the assumption that α corresponds to DP, PP or KP while $X^0$ corresponds to $V^0$ or functional $F^0$, we get the following configurations:

---

[21] The idea that functional $P^0$ and $K^0$ heads are associated with a semantic feature [σ2] when they emerge from the numeration is not against our ealier assumptions. Both $P^0$ and $K^0$ are functional heads; hence, it seems reasonable to suppose that they, even though they do not always have an overt phonological realisation, can be associated with an independent semantic content. In the system depeloped here, this independent semantic content is expressed in terms of the semantic feature [σ2].

Diagram (4.27)

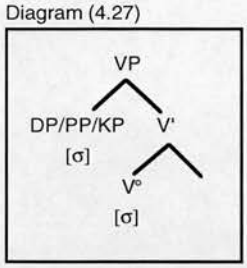
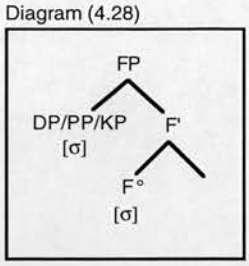



Diagram (4.28)




Because semantic feature checking is defined strictly as a property of the position of merge, it provides a powerful way of ensuring that DPs, PPs and KPs inserted into the correct positions in the derivation; Diagram (4.27) describes the way in which an argument of V is merged as specifier of V while Diagram (4.28) describes a situation in which a non-argument, eg a sentence adverbial, is merged as specifier of a functional head. In both cases, there is semantic feature checking between the DP, PP or KP and the V or functional head.

Just like the case feature [C] or [K], I hypothesize that a single semantic feature [σ] can range over different values: these values are "spelled out" as [Agent], [Theme], [Manner] and so on, ie as what are typically known as thematic roles. This means that we are dealing with the following situation:

Diagram (4.29)

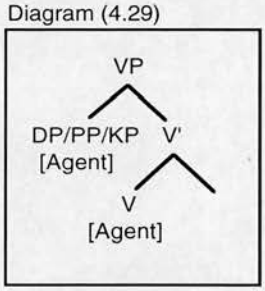



Diagram (4.30)

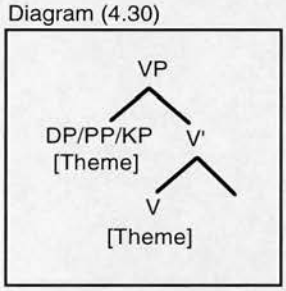
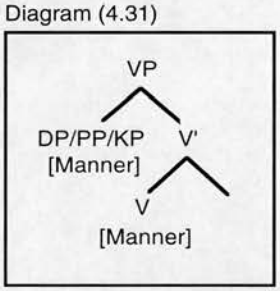



Diagram (4.31)




Because semantic feature checking now seems to overlap theta theory in important respects, it is doubtful if we need both semantic feature checking and theta theory - clearly, a system which has one or the other would be more economical and desirable than a system which has both. I argue that in bare phrase structure, semantic feature checking can indeed replace theta theory - I disagree here quite fundamentally with Chomsky (1995, 312ff.) who, although he admits that theta theory is "virtually complementary to the theory of checking," maintains that theta theory cannot be reduced to a form of feature checking.[22]

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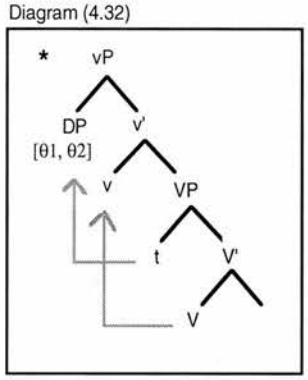
[22] See also the discussion in Collins (1997, 69ff.). Note, though, that the theory of semantic feature checking proposed here is rather different from the theory of feature checking proposed in Chomsky (1995) and Collins (1997) and related work. In particular, because semantic feature checking is a property of the position of merge, it does not drive movement. The need for an independent theta

(continued⇒)

In bare phrase structure, there are a number of reasons for questioning the need for an independent theta theory. For example, the requirement that theta relatedness is strictly a property of the position of merge is meant to ensure that there is no movement to a theta position (ie there is no movement to a position in which a theta role is assigned). In Diagram (4.32) below, the DP is merged into a position in which it is assigned Theme theta role (represented as θ1) by V. The DP is not permitted to undergo movement to another theta position, ie to another position in which it is assigned another theta role (represented as θ2) by V (or by light v - I will return to light vPs in Chapter Five) - this movement is ruled out because the DP would end up with two different theta roles, causing a violation of the theta criterion (ie each argument must be assigned one and only one theta role, and each theta role must be assigned to one and only one argument):

Diagram (4.32)




However, in bare phrase structure theory, movement is always from one argument position to another argument position, or from an argument position to an A'-position. The former type of movement, according to Chomsky, is driven by a need to check case features while the latter is driven by a need to check some A'-features, including Wh- and focus features. Because there exist no features which would drive the movement of DPs from one theta-related argument position to another theta-related argument position, the requirement that a single argument must not have two theta roles and the fact that there exist no features which would drive movement from one theta position to another, overlap.

On the basis of the preceding considerations, we can see that in bare phrase structure, theta theory has lost the one function that it had in the earlier phrase structure theories. But how does a system involving semantic feature checking ensure that the situation illustrated in Diagram (4.32) results in a crash? Just like

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theory is also questioned, although for rather different reasons than here, in Collins & Gruber (1996) and Gruber (1996).

theta theory, semantic feature checking is strictly a property of the position of merge. This means that the DP must check, at the point of merge, its semantic feature and value against the corresponding feature and value of the $V^0$ or functional $F^0$ head - the derivation converges if the DP and the $V^0$ or $F^0$ have a matching feature and value and crashes (or, is cancelled) if they do not. Because semantic features can only be checked at the point of merge, the situation illustrated in Diagram (4.32) does not arise: the DP, having already checked its semantic feature at the point of merge, has no semantic features left which would allow it to be attracted by another V or functional head.

The fact that theta theory alone cannot explain all the data but semantic feature checking can provides further support for the idea that theta theory can be replaced by a system involving semantic feature checking. Recall that in theta theory, the semantics of the predicate determines the number and types of theta roles that it assigns to arguments. If the predicate assigns Agent and Theme theta roles, for example, the derivation must contain two arguments which are assigned Agent and Theme theta roles, respectively. However, the arguments must also be *compatible* with their respective theta roles. In [18a-c], the verbal predicate *kertoa* 'tell' assigns three theta roles: Agent, Goal (or Recipient; Benefactive; the labels of thematic roles are not fixed) and Theme or (for lack of a better term) Source. This means that the derivation must contain three arguments which must be compatible with the Agent, Goal and Theme or Source theta roles:

*THEME*

(18) a. *Sirkku kerto-i Pulmu-lle kamala-n asia-n.*
Sirkku-Nom tell-past-3sg Pulmu-Allat horrible-sg-Acc matter-sg-Acc
'Sirkku told Pulmu a horrible thing'

*SOURCE*

b. *Sirkku kerto-i Pulmu-lle kamala-sta asia-sta.*
Sirkku-Nom tell-past-3sg Pulmu-Allat horrible-Elat matter-sg-Elat
'Sirkku told Pulmu about a horrible matter'

*SOURCE*

c. **Sirkku kerto-i Pulmu-lle kamala-lta asia-lta.*
Sirkku-Nom tell-past-3sg Pulmu-Allat horrible-Ablat matter-sg-Ablat

In theta theory, nothing really explains why [18b] is grammatical but [18c] is not (ie why *kamalasta asiasta* can receive Source theta role from V but *kamalalta asialta* cannot). However, on the assumption that nominal items are associated with a semantic feature [σ] which needs checking at the point of merge, we are better able to explain the grammaticality of [18b] and the ungrammaticality of [18c]. In [18b], the value of [σ] which is a union of [σ2] and [σ1] is "spelled out" as [Source]

whereas in [18c] it is "spelled out" as something else - this could be because in [18c] either [σ2], [σ1] or both have a different value. Because the verbal predicate *kertoa* is associated with the value [Source] when it emerges from the numeration, [18b] is fine while [18c] involves a mismatch of features at the point of merge:

Diagram (4.33)

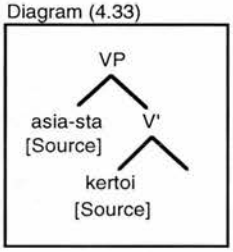
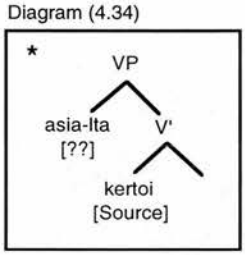



Diagram (4.34)




In the preceding discussion, we have treated the case feature [C] or [K] and the semantic feature [σ] as two completely different features which just happen to be associated with a single inflectional ending for structural or lexical case. Before closing off this sub-section, let me address the following question briefly: are [C] or [K] and [σ] two completely independent features, or are we dealing with two connected features? In other words, are case-related feature checking and semantic feature checking two completely independent operations, or is there interaction between them? At first sight, there may seem to be some correlation between the features [C] or [K] and [σ]. In Finnish, for example, nominal items carrying a feature and value for Nominative or Accusative case tend also to carry a semantic feature which has the value [Agent] or [Theme] - this means that a DP which inflects and carries a feature for Nominative or Accusative case typically also carries a semantic feature [Agent] or [Theme], whereas a DP which inflects and carries a feature for, say, Inessive or Instructive case is never associated with such semantic features and values:[23]

| | | |
|---|---|---|
| | *AGENT* | *THEME* |
| (19) a. | *Sirkku ampu-i* | *Pulmu-n.* |
| | Sirkku-Nom | shoot-past-3sg Pulmu-Acc |
| | 'Sirkku shot Pulmu' | |

[23] In Government and Binding theory, attempts were made to relate case theory to theta theory - these include the so-called visibility hypothesis and Burzio's Generalization - see eg Chomsky (1981) and Burzio (1986). But in the system proposed in Chomsky (1993; 1994; 1995) and related work, case theory and theta theory are treated as two independent modules; some relevant discussion can also be found in Tremblay (1996).

*AGENT* *THEME*
b. **Sirku-ssa ampu-i Pulmu-i-n.*
Sirkku-Iness shoot-past-3sg Pulmu-pl-Instr

*AGENT* *THEME*
c. **Pulmu-i-n ampu-i-vat Sirku-ssa.*
Pulmu-pl-Instr shoot-past-3pl Sirkku-Iness

However, the following Finnish data indicate that various types of case features can appear with a single semantic feature, just as a single case feature can appear with various types of semantic features:

*EXPERIENCER*
(20) a. *Sirku-n o-n nälkä.*
Sirkku-Gen be-pres-3sg hungry
'Sirkku is hungry'

*EXPERIENCER*
b. *Sirku-lla o-n nälkä*
Sirkku-Adess be-pres-3sg hunger
'Sirkku is hungry'

*EXPERIENCER*
c. *Sirku-lle käv-i köpelö-sti.*
Sirkku-Allat fare-past-3sg bad-Adv
'Things turned out badly for Sirkku'

*AGENT* *LOCATION/DIRECTION*
d. *Sirkku matkust-i Ruotsi-in.*
Sirkku-Nom travel-past-3sg Sweden-Illat
'Sirkku travelled to Sweden'

e. *AGENT* *LOCATION/DIRECTION*
*Sirkku matkust-i Venäjä-lle.*
Sirkku-Nom travel-past-3sg Russia-Allat
'Sirkku travelled to Russia'

*AGENT* *MANNER/INSTRUMENT*
(21) a. *Sirkku murhas-i Pulmu-n kive-llä.*
Sirkku-Nom murder-past-3sg Pulmu-Acc stone-Adess
'Sirkku murdered Pulmu with a stone'

*AGENT* *LOCATION*
b. *Sirkku murhas-i Pulmu-n kive-llä.*
Sirkku-Nom murder-past-3sg Pulmu-Acc stone-Adess
'Sirkku murdered Pulmu on/by/near a stone'

*EXPERIENCER*
c. *Sirku-lla o-n nälkä.*
Sirkku-Adess be-pres-3sg hunger
'Sirkku is hungry'

So, although the data in [19a-c] suggest that there might be some correlation between case and semantic features, examples like [20] and [21] show that there can be no one-to-one correspondence between them. Rather, a single case feature and value can be associated with different semantic features and values, just as a single semantic feature can be associated with a different case features and values. I therefore conclude that the tendency of particular types of case features to appear with particular semantic features, and vice versa, is rather a lexically determined property.

### 4.3.2. The Grammatical Functions of Finnish DPs, PPs and KPs

In the previous sub-sections, we have seen that DPs have a case feature [C] which needs checking in a functional AgrP or AspectP whereas PPs and KPs have all their case features checked PP- or KP-internally. We have also seen that DPs, PPs and KPs have a semantic feature [σ] which is checked at the point of merge, when the DP, PP or KP enters the derivation as a specifier of V or functional head. The requirement that there must be feature checking between the DP, PP or KP and the V or functional $F^0$ head ensures that they are merged into the correct positions. In this sub-section, I discuss the grammatical functions (eg subject, direct object, indirect object and adverbial) of Finnish DPs, PPs and KPs briefly. I begin by looking at the grammatical functions of Finnish DPs first.

#### 4.3.2.1. DPs

Hakulinen & Karlsson (1979, 157ff.), Karlsson (1983, 76ff.), Leino (1989, 104) and Vilkuna (1996, 75ff.; 110ff) observe that Finnish subjects typically inflect for Nominative or Partitive case while direct objects inflect for Nominative, Accusative or Partitive case:

(22) a. *Pulmu ammu-tti-i-in.*
Pulmu-Nom shoot-pass-past-pass.agr
'Pulmu was shot'

b. *Pulmu-a ammu-tt-i-in.*
Pulmu-Part shoot-pass-past-pass.agr
'Pulmu was shot at'

c. *Ranna-lla juos-t-i-in maraton.*
Beach-sg-Adess run-pass-past-pass.agr marathon-sg-Nom
'On the beach was run a marathon'

d. *Pulmu laulo-i aaria-n.*
Pulmu-Nom sing-past-3sg aria-sg-Acc
'Pulmu sang an aria'

e. *Pulmu laulo-i aaria-a.*
Pulmu-Nom sing-past-3sg aria-sg-Part
'Pulmu was singing an aria'

Given the discussion in the previous sub-sections, we can see that these subjects and direct objects have the form of DPs which are associated with the case feature [C] and semantic feature [σ] which need checking in the syntax. The semantic feature [σ] is checked at the point of merge: in line with normal minimalist and non-minimalist assumptions, I propose that Finnish subjects and direct objects are merged as specifiers of $V^0$ heads. Because the DP and $V^0$ must have a matching semantic feature and value, a DP containing a semantic feature and value [Agent] must be merged as a specifier of a $V^0$ also containing a semantic feature and value [Agent], while a DP containing the semantic feature and value [Theme] must be merged as a specifier of a $V^0$ also containing a semantic feature and value [Theme]:

Diagram (4.35)

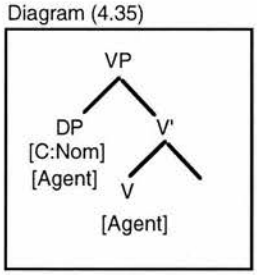
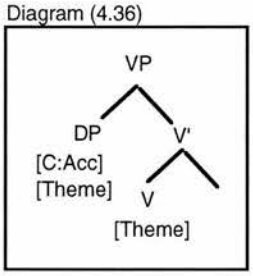



Diagram (4.36)




DPs have case-related features which need checking in an appropriate functional Agr or Aspect projection; this means that the DPs must raise from their original positions of merge to derived positions, to have all their case-related features checked in an appropriate functional projection, in a manner discussed in the previous sub-sections.

Hakulinen & Karlsson (1979, 201; 216ff.), Leino (1989, 128) and Vilkuna (1996, 168) show that the so-called adverbials of amount (*objektin sijaiset määrän adverbiaalit; OSMAt*) also inflect and carry a feature for structural (ie for Nominative and Accusative) case in Finnish:[24]

[24] For more discussion on Finnish adverbials of amount, see Maling (1993), Nelson (1995) and Vilkuna (1996).

(23) a. *Ranna-lla juos-t-i-in tunti.*
Beach-sg-Adess run-pass-past-Agr hour-sg-Nom
'On the beach there was running for an hour'

b. *Sirkku laulo-i tunni-n.*
'Sirkku-Nom sing-past-3sg hour-sg-Acc
'Sirkku sang for an hour'

Finnish adverbials of amount are similar to direct objects in that they signal aspectual distinctions by means of alternating between Nominative and Accusative case - crucially, an adverbial of amount inflecting and carrying a feature for Accusative case cannot appear with a verb carrying the aspectual feature [+Completed]:

(24) a. *Sirkku laulo-i aaria-a tunni-n.*
Sirkku-Nom sing-past-3sg aria-sg-Part hour-sg-Acc
'Sirkku was singing the aria for an hour'

b. **Sirkku laulo-i aaria-n tunni-n.*
Sirkku-Nom sing-past-3sg aria-sg-Acc hour-sg-Acc
'Sirkku sang the (whole) aria for an hour'

Because adverbials of amount are sensitive to aspectual features like [±Completed], I propose that they are merged as specifiers of V but move to a specifier of an aspectual functional projection, to check their aspectual features. In other words, they have a semantic features [σ] which is checked against the corresponding feature on the $V^0$ head at the point of merge, and a case feature [C] which is checked in an appropriate aspectual functional projection - the adverbial raises to the specifier, while the verb raises to the head, of this aspectual functional projection. Crucially, there is no reason to suspect that in Finnish adverbials of amount, the feature [C] would also stand for some kind of transitivity-related features; in other words, rather than both aspectual and transitivy-related features, such adverbials might only be associated with aspectual features which need checking in an appropriate aspectual functional projection.

### 4.3.2.2. PPs

In Finnish, only adverbials have the form of PPs; cf. Hakulinen & Karlsson (1979, 200ff.). In Chapters One and Three, we have seen that there exist two different types of adverbials: VP adverbials and sentence adverbials. Considering VP adverbials

first, I propose that the PP is merged as a specifier of V so that it checks its semantic feature [σ] against the corresponding feature of V. Turning now to sentence adverbials, I propose that the PP is merged as a specifier of a functional $F^0$ head so that it checks its feature [σ] against the corresponding feature of $F^0$:

Diagram (4.37)

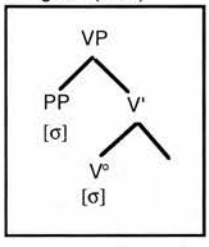
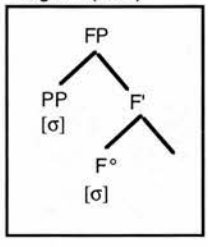



Diagram (4.38)




I take Diagram (4.37) to illustrate the way in which VP adverbials such as *ilman kuria, järven poikki* and *ennen kuutta* , and Diagram (4.38) to illustrate the way in which the sentence adverbials *ilman muuta* and *ennen kaikkea* enter the derivation:[25]

(25) a. *Pulmu kasvo-i [$_{PP}$ ilman kuri-a].*
Pulmu-Nom grow-past-3sg without discipline-Part
'Pulmu grew up without discipline'

b. *Pulmu sout-i [$_{PP}$ järve-n poikki].*
Pulmu-Nom row-past-3sg lake-Gen across
'Pulmu rowed across the lake'

c. *Pulmu saapu-i [$_{PP}$ ennen kuut-ta].*
Pulmu-Nom arrive-past-3sg before six-Part
'Pulmu arrived before six o'clock'

d. *Pulmu o-n [$_{PP}$ ilman muu-ta] laula-nut aario-i-ta.*
Pulmu-Nom be-pres-2sg without else-Part sing-2pcp aria-pl-Part
'Without doubt, Pulmu has sung arias'

e. *Halua-n [$_{PP}$ ennen kaikke-a] laula-a aario-i-ta.*
Want-pres-1sg before else-Part sing-1inf aria-pl-Part
'More than anything else, I want to sing arias'

Because PPs have no case-related features left which would need checking in an AgrP or AspectP, they are allowed to remain in their original positions of merge at the interface levels. But PPs can sometimes have A'-features which need checking in an A'-position - there is an interesting difference between PPs which are merged as specifiers of V and PPs which are merged as specifiers of functional

[25] I will give more motivation for merging manner, place and time adverbials into Spec/VP in Chapters Five and Six.

heads, with regard to movement to A'-positions:[26]

(26) a. *[PP Mitä ilman]$_i$ Pulmu kasvo-i* $\mathbf{t_i}$ *?*
What-Part without Pulmu-Nom grow-past-3sg
'What did Pulmu grow up without'

b. *[PP Minkä poikki]$_i$ Pulmu sout-i* $\mathbf{t_i}$ *?*
What-Part across Pulmu row-past-3sg
'What did Pulmu row across'

c. *[PP Mitä ennen]$_i$ Pulmu saapu-i* $\mathbf{t_i}$ *?*
What-Part before Pulmu arrive-past-3sg
'Before what time did Pulmu arrive'

d. **[PP Mitä ilman]$_i$ Pulmu o-n* $\mathbf{t_i}$ *laula-nut aario-i-ta?*
What-Part without Pulmu-Nom be-pres-3sg sing-2pcp aria-pl-Part
'What has Pulmu without sung arias'

e. **[PP Mitä ennen]$_i$ halua-n* $\mathbf{t_i}$ *laula-a aario-i-ta?*
What-Part before want-pres-1sg sing-1inf aria-pl-Part
'Before what do I want to sing arias'

(27) a. *[PP Ilman kuri-a]$_i$ Pulmu kasvo-i* $\mathbf{t_i}$*.*
Without discipline-Part Pulmu-Nom grow-past-3sg
'It was without discipline that Pulmu grew up'

b. *[PP Järve-n poikki]$_i$ Pulmu sout-i* $\mathbf{t_i}$*.*
Lake-Gen across Pulmu-Nom row-past-3sg
'It was across the lake that Pulmu rowed'

c. *[PP Ennen kuut-ta]$_i$ Pulmu saapu-i* $\mathbf{t_i}$*.*
Before six-Part Pulmu-Nom arrive-past-3sg
'It was before six o'clock that Pulmu arrived'

d. *?[PP Ilman muu-ta]$_i$ Pulmu o-n* $\mathbf{t_i}$ *laula-nut aari-o-ita.*
Without else-Part Pulmu-Nom be-pres-3sg sing-2pcp aria-pl-Part
'It is without any doubt that Pulmu has sung arias'

e. *?[PP Ennen kaikke-a]$_i$ halua-n* $\mathbf{t_i}$ *laula-a aari-o-ita.*
Before else-Part want-pres-3sg sing-1inf-aria-pl-Part
'It is more than anything else that I want to sing arias'

In order to explain the difference between VP and sentence adverbials, we could assume that the ability of PPs to contain features which need checking and drive movement to derived A'-positions is somehow related to the types of semantic features that also contain: the feature [σ] which allows PPs to be merged as

[26] [26d-e] are marked as being ungrammatical because it is impossible to interpret the adverbials *mitä ennen* and *mitä ilman* as sentence adverbials; it is possible to interpret them as manner and place adverbials of some kind, however.

specifiers of V can co-occur freely with such features while the feature [σ] which allows PPs to be merged as specifiers of functional heads is unable to co-occur with such features. As a result, the latter types of PPs are unable to move to a derived A'-positions - I will return to this is the next sub-section.

### 4.3.2.3. KPs

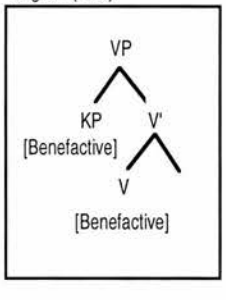
[28a-b] show that Finnish indirect objects inflect for Allative case - more examples of Finnish indirect objects can be found in Karlsson (1983, 126), Leino (1989, 58) and Vilkuna (1996, 76ff.), among many others. Because the Allative is a lexical case, we can see that Finnish indirect objects have the form of KPs:[27]

(28) a. *Sirkku laulo-i Pulmu-lle aaria-n.*
'Sirkku-Nom sing-past-3sg Pulmu-Allat aria-sg-Acc
'Sirkku sang Pulmu an aria'

b. *Sirkku anto-i Pulmu-lle surffilauda-n.*
Sirkku-Nom give-past-3sg Pulmu-Allat surf board-sg-Acc
'Sirkku gave Pulmu a surf board'

The semantic feature [σ] of KP is checked at the point of merge - in line with the normal minimalist and non-minimalist assumptions, I assume that indirect objects are arguments of V. This means that they are merged as specifiers of V, and check their semantic feature [σ] - which could have a value like [Goal], [Benefactive] or [Recipient], depending on the type of terminology that one chooses to use - against the corresponding feature of V:

Diagram (4.39)




[27] The term *indirect object* is controversial in Finnish; Vilkuna (1996) calls her indirect objects obliques while Hakulinen & Karlsson treat them as adverbials. In this thesis, I use the term *indirect object,* in order to emphasize the fact that these elements behave in the same way, and express a similar meaning, as their Germanic counterparts. For example, they can be made subjects which raise to Spec/AgrSP in both Finnish and English: *Pulmu antoi Sirkulle kirjan/Pulmu gave Sirkku a book* vs *Sirkulle annettiin kirja/Sirkku was given a book.*

Besides indirect objects, adverbials typically inflect and carry a feature for lexical case. We have seen that there are two types of adverbials: VP adverbials and sentence adverbials. VP adverbials, including manner, place and time adverbials, are merged as specifiers of V while sentence adverbials are merged as specifiers of functional heads, under semantic feature checking between the adverbials and the V or functional heads:

(29) a. *Sirkku saapu-i [$_{KP}$ tyyli-llä].*
Sirkku-Nom arrive-past-3sh style-Adess
'Sirkku arrived with style'

b. *Sirkku kävele-e [$_{KP}$ ranna-lla].*
Sirkku-Nom walks-pres-3sg beach-Adess
'Sirkku walks on the beach'

c. *Sirkku kävele-e [$_{KP}$ illa-lla].*
Sirkku-Nom walk-pres-3sg evening-Adess
'Sirkku walks in the evening'

d. *Se voi-da-an [$_{KP}$ varmuude-lla] sano-a, että...*
It-Nom may-Pass-Agr certain-Adess say-1inf that...
'We may say for certain that ...'

e. *Sirkku o-n [$_{KP}$ tode-lla] laula-nut aario-i-ta.*
Sirkku-Nom be-pres-3sg truth-Adess sing-2pcp aria-pl-part
'Sirkku has really sung arias'

Diagram (4.40) gives the partial structure of [29a-c] while Diagram (4.41) gives the partial structure of [29d-e]:

Diagram (4.40)

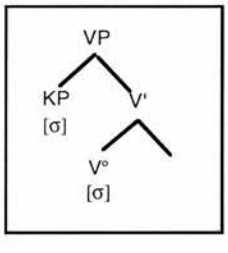
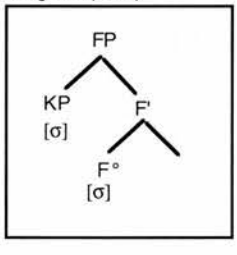



Diagram (4.41)




Because KPs have no case-related features left, there can be no movement to Spec/AgrP or Spec/AspectP. This explains why adverbials are seen as being stationary: if movement is driven by feature checking, a morphological property, then clearly one cannot move something that has no features left to check. This also explains the conclusion drawn in Chomsky (1995, 329) that adverbials "seem to have no morphological properties" which drive their movement (to an A-position).

However, although adverbials may not have any features left which would drive their movement to A-positions, they can still have features which drive their

movement to derived A'-positions: such features include Wh- and focus features. In the previous sub-section, we looked at the behaviour of adverbials which have the form of PPs with regard to A'-movement and concluded that the former can undergo movement to derived A'-positions relatively freely, whereas the latter cannot. As shown by [30] and [31], this is also true of adverbials which have the form of KPs - [30] contains examples of Wh-movement, [31] of focus-movement:[28]

(30) a. *Miten$_i$ Sirkku saapu-i* $t_i$ *?*
How Sirkku-Nom arrive-past-3sg
'How did Sirkku arrive'

b. *Missä$_i$ Sirkku kävele-e* $t_i$ *?*
Where Sirkku-Nom walk-past-3sg
'Where does Sirkku walk'

c. *Milloin$_i$ Sirkku kävele-e* $t_i$ *?*
When Sirkku-Nom walk-pres-3sg
When does Sirkku walk'

d. ***???***
e. ***???***

(31) a. *Tyyli-llä$_i$ Sirkku saapu-i* $t_i$.
Style-Adess Sirkku-Nom arribe-past-3sg
'It is with style that Sirkku arrived'

*Ranna-lla$_i$ Sirkku kävele-e* $t_i$.
Beach-Adess Sirkku-Nom walk-pres-3sg
It is on the beach that Sirkku walks'

c. *Illa-lla$_i$ Sirkku kävele-e* $t_i$.
Evening-Adess Sirkku-Nom walk-pres-3sg
'It is in the evening that Sirkku walks'

d. *?Varmuude-lla$_i$ se voi-da-an* $t_i$ *sano-a, että...*
Certainty-Adess it-Nom may-Pass-Agr certain-Adess say-1inf that...
'It is for certain that we may say...'

e. *??Tode-lla$_i$ Sirkku o-n* $t_i$ *laula-nut aario-i-ta.*
Truth-Adess Sirkku-Nom be-pres-3sg sing-2pcp aria-pl-part
'It is really that Sirkku has sung arias'

In the previous sub-section, I assumed that the semantic feature [σ] of VP-adverbials is able to co-occur freely with Wh- and focus features while the semantic

[28] As shown by ***???*** in [30d-e], there exist no corresponding Wh-forms of *varmuudella* 'for certain' and *todella* 'really' in Finnish.

feature [σ] of sentence adverbials is not. This seems like a reasonable assumption; just like a lexical verb cannot be specified both [+Mood] and [+Participial] in Finnish, one might assume that a nominal item, such as a PP or KP, cannot be specified both [+Wh] and, say, [+Habitual] - consider eg **Miten yleisesti ottaen Sirkku on laulanut aarioita?* 'Who generally speaking Sirkku has sung arias'.[29]

The idea that Finnish VP adverbials are merged as specifiers of V while sentence adverbials are merged as specifiers of functional $F^0$ heads under semantic feature checking, is in keeping with the feature based theories of adverbials of Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997). For example, according to Laenzlinger (1996, 116), manner adverbials have a feature which allows them to be merged as specifiers of $V^0$ heads which have a feature [Activity], while according to Cinque epistemic and habitual sentence adverbials have a feature which allows them to be merged as specifiers of functional heads which have a feature [+Epistemic] or [+Habitual]. But of course, the examples given by Laenzlinger and Cinque contain adverbs/AdvPs, rather than KPs. But this shows that there are similarities between adverbs/AdvPs and KPs; both have a feature which allows them to be merged as specifiers of particular types of V or functional heads, under semantic feature checking between themselves and the V or functional heads. In Section 4.5., I show that we can create an even more uniform theory of adverbials, by analysing even AdvPs as KPs.

### 4.3.3. Structural and Lexical Case in English and Swedish

In this sub-section, I show briefly how the system of structural and lexical case developed in the previous sub-sections can be applied to languages other than Finnish; I will mainly focus on English and Swedish examples. To begin with, [32a-d] show that English and Swedish have structural (Nominative and Accusative) case, visible in personal pronouns:

(32) a. *The woman-Nom saw the woman-Acc.*

---

[29] The ability of VP adverbials and the inability of sentence adverbials to undergo A'-movement to positions like Spec/CP and Spec/FocusP is also discussed in Laenzlinger (1996; 1998). According to him, VP adverbials are subject to checking theory - this means that they can continue to move after having checked their Case, ϕ- and θ-features. But sentence adverbials are subject to the Adv-Criterion; hence, they cannot continue to move once they have checked their quantificational features at the point of merge.

b. *She-Nom saw her-Acc.*

c. *Kvinnan-Nom såg kvinnan-Acc.*
d. *Hon-Nom såg henne-Acc.*

I propose that English and Swedish nominal items with structural case project to DP in exactly the same way as Finnish nominal items with structural case project to DP:

Diagram (4.42)

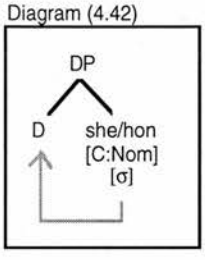
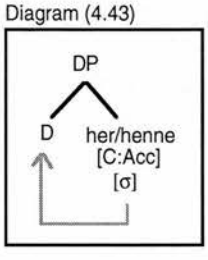



Diagram (4.43)




DPs have a case feature [C] which is checked in an appropriate functional AgrP (and possibly in an AspectP), in a manner discussed in Chomsky (1993; 1994; 1995), Lasnik (1993), Koizumi (1995) and related work. DPs also have a semantic feature [σ] which is checked at the point of merge, against the features of the appropriate $X^0$ head - if [σ] has the value [Agent], the DP must be merged as a specifier of $V^0$ which is also specified [Agent]; if it has the value [Theme], the DP must be merged as a specifier of $V^0$ which is specified [Theme].

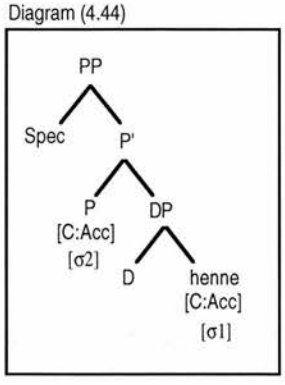
But even in English and Swedish, the case feature [C] and its values can sometimes be checked in another way, against a functional P head. The nominal item projects first to DP; the DP is selected by a functional $P^0$ as a complement, and the DP (or its features) raise to Spec/PP:

(33) a. *Sirkku gave the apple <u>to Pulmu</u>.* *English*
b. *She gave the apple <u>to her</u>.*

c. *Sirkku gav äpplet <u>till Pulmu</u>.* *Swedish*
d. *Hon gav äpplet <u>till henne</u>.*

So, like Finnish PPs, English and Swedish PPs have the (pre-movement) structure illustrated in Diagram (4.44). The case feature [C] and its value [Accusative] is checked by moving the DP to Spec/PP - while Finnish $P^0$s are specified [C:Genetive] or [C:Partitive], English and Swedish $P^0$s are specified [C:Accusative]. Because $P^0$ is associated with the semantic feature [σ2], the semantic feature which is associated with the maximal projection PP is a combination of [σ2] and [σ1], contributed by the DP and $P^0$:

Diagram (4.44)




In [34a-d], the DPs *Pulmu/her/henne* and the PPs *to/till Pulmu/her/henne* are associated with the same semantic feature [σ] which has a value like [Benefactive]:

(34) a. *Sirkku gave Pulmu/ her an apple.*
b. *Sirkku gave an apple to Pulmu/ to her.*

c. *Sirkku gav Pulmu/ henne ett äpple.*
d. *Sirkku gav ett äpple till Pulmu/ till henne.*

Because the DPs *Pulmu/her/henne* and the PPs *to/till Pulmu/her/henne* are associated with the same semantic feature and value [Benefactive], they can be merged into the same specifier of V position, under semantic feature checking. Note that in [34a,c] both the direct and indirect object must raise to an appropriate Spec/AgrP for case(-related) feature checking. But in [34b,d] only the direct object must raise while the indirect object, because PPs have no case(-related) features left which would need further checking, is allowed to stay in its original position of merge. For a similar view on direct and indirect objects, see Collins & Thráinsson (1993; 1996) and Koizumi (1995).

In the preceding discussion, we have looked at the structure of English and Swedish DPs and PPs. Can English and Swedish have KPs at all? In order to answer this question, let us consider the following sentences from Larson (1985, 595):

(35) a. *Max pronounced my name [every way imaginable].*
b. *I saw John [that day].*

According to Bresnan & Grimshaw (1978) and Emonds (1987), adverbials like *every way imaginable* and *that day* are PPs which have a phonologically empty $P^0$ head. According to Larson (1985), *every way imaginable* and *that day* are NPs

which have inherent (lexical; semantic) case. Larson calls such NPs bare-NP adverbs and claims that they are headed by a particular class of nouns which contain a case assigning feature [+F]. In other words, Larson's bare-NP adverbs, because their heads contain the case assigning [+F], are able to assign case to themselves, in the absence of an external case assigner such as V or P. In the system developed here, Larson's bare-NP adverbs could either be analysed as PPs which have a phonologically empty $P^0$ head or, alternatively, as KPs. If they are analysed as PPs, we would have to conclude that, although Finnish does not have phonologically empty $P^0$ heads, languages like English and Swedish do. If, on the other hand, they are analysed as KPs, then we would have to conclude, contra Emonds (1985; 1987), that the features of functional $K^0$ heads are *not* always phonologically realised in their sister nodes.

## 4.4. Manner Meaning and Lexical Case

In this section, I return to the examples of Finnish manner adverbials given in Section 4.1. My aim is to provide an analysis of these elements, in terms of the system of structural and lexical case developed in the previous sections.

As pointed out in Section 4.1., Finnish manner adverbials typically have the form of nouns, adjectives and infinitives inflecting for the Adessive case:

(35) a. *Sirkku suhtautu-u asia-an kunnioitukse-lla.*
Sirkku-nom treat-pres-3sg matter-illat respect-Adess
'Sirkku regards/treats the matter with respect'

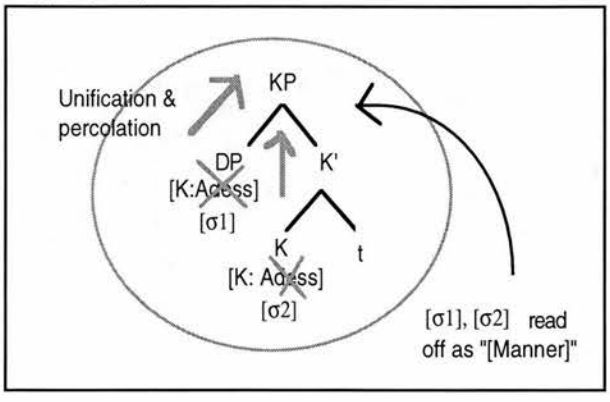
b. *Mika Häkkinen kaasutt-i täysi-llä.*
Mika Häkkinen-nom accelerate-past-3sg full-Adess
'Mika Häkkinen accelerated fast'

c. *Sirkku kävele-e ontu-ma-lla.*
Sirkku-nom walk-pres-3sg limp-2inf-Adess
'Sirkku walks with a limp'

Given the discussion in the previous sections, we can now analyse nominal items such as *kunnioituksella, täysillä* and *ontumalla* as KPs. As the stem morphemes *kunnioitus, täysi* and *ontuma-* do not receive manner interpretations in Finnish but the combinations of these stems and Adessive case do, it seems reasonable to suppose that the manner meaning is related to the presence of Adessive case. In the previous sections, I argued that the inflectional ending for Adessive case is

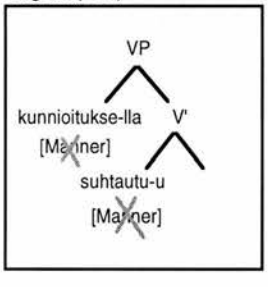
associated with a semantic feature [σ1] which percolates to DP and which, together with the semantic feature [σ2] of $K^0$, produces a feature and value which is "spelled out" as [Manner], by the semantic feature checking operation - we are dealing with the following type of situation:

Diagram (4.45)



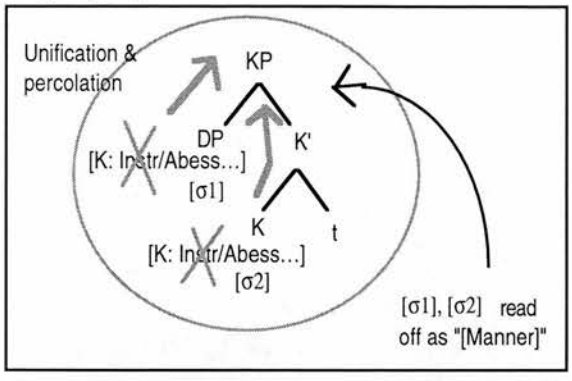

The semantic feature and value [Manner] is checked when the KP is enters the derivation as a specifier of V:

Diagram (4.46)



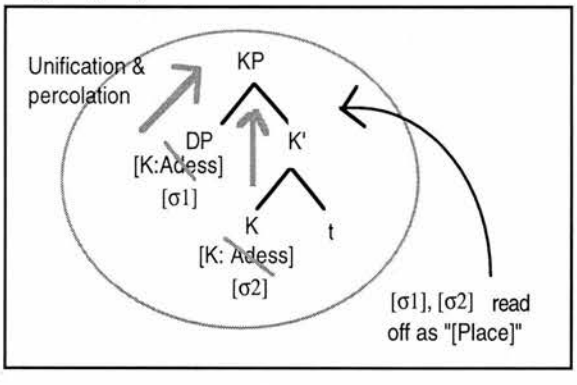

In Section 4.1. we have seen that some other lexical cases, including the Instructive, Abessive, Partitive, Translative, Essive and Illative, can also be associated with the semantic feature specification [Manner]. This supports the view presented at the end of Section 4.3. that there is no one-to-one correspondence between case and semantic features - the fact that a single semantic feature and value can be associated with a number of different case-related features means that we are dealing with the following type of situation:

Diagram (4.47)




However, a single case feature and value can sometimes also be associated with a number of different semantic features and values; we can describe this in the following way:

Diagram (4.48)




The fact that a single case feature can be associated with different semantic features can also be observed from [36a-b]: *kive-llä* 'stone-Adess' and *saha-lla* 'saw-Adess' can be interpreted either as manner adverbials, or as place adverbials:

(36) a. *Sirkku tappa-a Pulmu-n kive-llä.*
Sirkku-nom kill-pres-3sg Pulmu-Acc stone-sg-Adess
'Sirkku kills Pulmu with a stone'
'Sirkku kills Pulmu by a stone/on a stone'

b. *Pulmu katkais-i käte-n-sä saha-lla.*
Pulmu-Nom cut-past-3sg arm-sg-Acc-Px saw-sg-Adess
'Pulmu cut her arm with a saw'
'Pulmu cut her arm at the saw mill'

I hypothesize that the manner adverbial *kivellä/sahalla* is associated with a different semantic feature than the place adverbial *kivellä/sahalla;* because semantic features

are checked at the point of merge, against the corresponding features of the $X^0$ head, the element with the feature specification [Manner] must be merged into a different specifier position than the element with the feature specification [Place]. In the former instance, we are dealing with the situation illustrated in Diagram (4.49), in the latter, with the situation illustrated in Diagram (4.50):

Diagram (4.49)

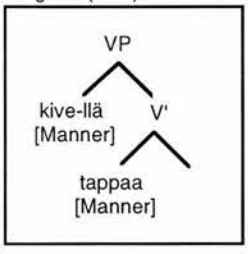
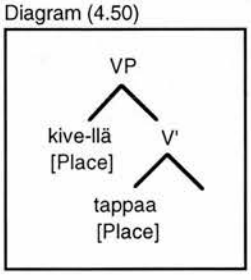



Diagram (4.50)



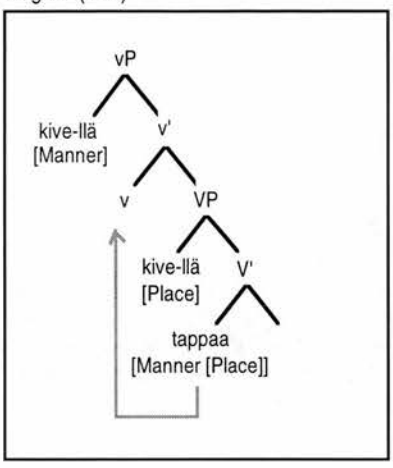

The fact that manner and place adverbials can co-occur suggests that a single lexical $V^0$ can be specified both [Manner] and [Place] when it emerges from the numeration:

(37) a. *Sirkku tappa-a Pulmu-n kive-llä kive-llä.*
Sirkku-nom kill-pres-3sg Pulmu-acc stone-sg-Adess stone-sg-Adess
'Sirkku kills Pulmu with a stone on/by a stone'
'Sirkku kills Pulmu by/on a stone with a stone'

b. *Pulmu katkais-i käte-n-sä saha-lla saha-lla.*
Pulmu-Nom cut-past-3sg arm-sg-Acc-Px saw-sg-Adess saw-sg-Adess
'Pulmu cut her arm with a saw at the saw mill'
'Pulmu cut her arm at the saw mill with a saw'

The sentences in [37a-b] have the following (partial) structure (I will give motivation for a layered VP structure in Chapters Five and Six; the lexical V, when it raises to v, is still associated with an unchecked feature [Manner] which allows the complex V+v head to enter into a checking relation with the manner adverbial *kivellä*):

Diagram (4.51)




In the discussion so far, we have looked at Finnish manner adverbials which have the form of nouns inflecting for lexical case. But we have seen that Finnish manner adverbials can also be adjectives, numerals and infinitivals carrying an inflectional ending and a feature for lexical case. Given the theory of phrase structure in the minimalist program, I analyse unmodified adjectives and numerals as minimal and maximal projections (ie as $Adj^0$s/AdjPs and $Num^0$s/NumPs). Because they carry an inflectional ending for lexical case, they contain the case feature [K] and are selected by a functional $K^0$ as a complement. They then raise to Spec/KP so that the case feature [K] can be checked against the correponding feature of $K^0$, and the semantic feature [σ1] is put in union with the semantic feature [σ2]:

Diagram (4.52)

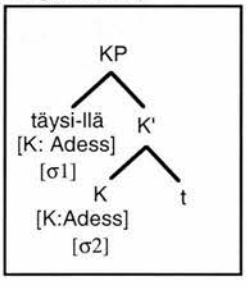



Diagram (4.53)

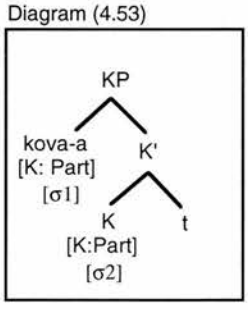
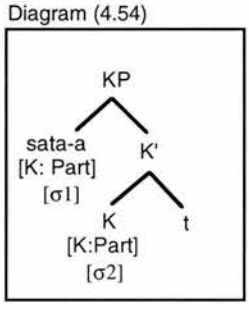



Diagram (4.54)




These KPs can then be merged as specifiers of $V^0$ or functional heads, under semantic feature checking.[30]

Let us now consider the structure of Finnish infinitival manner adverbials briefly:

---

[30] Adjectives and numerals can also function as modifiers of nouns: when they do, they remain as $Adj^0$s/AdjPs which are merged as specifiers of $N^0$ heads.

(38) a. *Sirkku kävele-e ontu-ma-lla.*
Sirkku-Nom walk-pres/3sg limp-3inf-Adess
'Sirkku walks with a limp'

b. *Sirkku kävele-e ontu-ma-tta.*
Sirkku-Nom walk-pres/3sg limp-3inf-Abess
'Sirkku walks without a limp'

c. *Sirkku kävele-e ontu-e-n.*
Sirkku-Nom walk-pres/3sg limp-2inf-Instr
'Sirkku walks with a limp'

*-ma-/-e-* can be analysed as an inflectional or derivational affix. In the former case, it is associated with a functional head selecting a VP complement whereas in the latter case, it is an $X^0$/XP which comes out of the numeration:

Diagram (4.55)

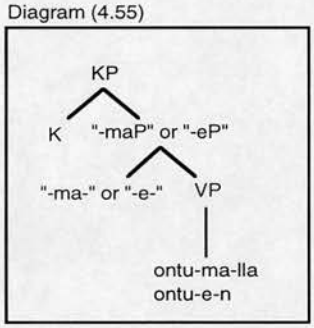
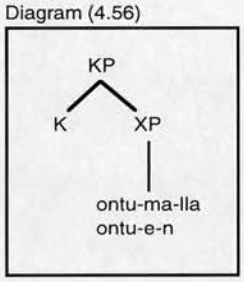



Diagram (4.56)




As the status of the Finnish *-ma-/-e-* as an inflectional/derivational affix is not directly relevant for the topic of this thesis, I will not discuss it here in any detail. The important point is that, under both views, Finnish infinitival manner adverbials can be analysed as having the form of KPs which are merged as specifiers of $V^0$ or functional heads, under semantic feature checking.

# 4.5. Derivational Affixes as Lexical Case Endings

## 4.5.1. Inflectional and Derivational "Manner" Affixes

In this sub-section, I discuss the internal structure of Finnish adverbs/AdvPs, and propose that adverbs are really adjectives and nouns inflecting and carrying a feature for lexical "adverb" case. Because adverbs/AdvPs are adjectives and nouns inflecting and carrying a feature for lexical case, they can also be analysed as having the form of KPs.

Let us begin by looking at the following set of examples:

(39) a. *Sirkku saapu-i nopea-sti.*
Sirkku-nom arrive-past-3sg fast
'Sirkku arrived fast'

b. *Sirkku laulo-i parhai-ten.*
Sirkku-nom sing-3sg-past best
'Sirkku sang the best'

c. *Sirkku saapu-i ääne-ti.*
Sirkku-nom arrive-3sg-past sound
'Sirrku arrived without a sound (ie quietly)'

d. *Halua-n lausu-a runo-j-a ruotsalais-ittain.*
Want-1sg-pres recite-infl poem-pl-part Swedish
'I want to recite poems the Swedish way'

According to Laaksonen & Lieko (1992, 117) Finnish manner adverbs are derived from adjectives and nouns by means of *-sti, -ten, -ti, -tta,* and *-(i)ttain.* As the stems *nopea, paras, ääni* and *ruotsalainen* do not receive manner interpretations in Finnish but the combinations of these stems and derivational affixes do, it is reasonable to suppose that the manner interpretation is connected to the derivational affix. However, in the preceding sections I argued that manner interpretation is connected to an *inflectional* affix, rather than a derivational one.

The standard view within the bare theory is that lexical items emerge from the numeration in their fully inflected forms, carrying all the necessary inflectional and derivational affixes. Inflectional affixes are associated with features which need checking in the syntax; whether derivational affixes like *-sti, -ten, -ti* and *-(i)ttain* are also associated such features is less clear. The idea that both inflectional and derivational morphemes are associated with features which need checking in the syntax is argued for in Booij (1995) - some relevant observations can also be found in Cinque (1997, 86; 111ff.) and Pesetsky (1995). According to Booij (1995), inflectional affixes can be divided into inherent and contextual subtypes. Inherent inflectional morphology consists of categories like tense, aspect and lexical case while contextual morphology consists of contextually determined phenomena such as agreement and structural case. Booij argues that there exist no clear boundaries between inherent inflectional morphology and derivational morphology: in his system, both inherent inflectional affixes and derivational affixes can be associated with independent semantic interpretations.

So, recent literature on inflectional and derivational morphology points towards a uniform analysis of nominal items with lexical case, and adverbs.

Uniform analyses of these elements are also discussed in Haspelmath (1995) and Vilkuna (1996, 39), who propose that adverbs are formed from adjectival stems by means of *inflectional,* rather than derivational, affixes. In other words, in their systems, affixes such as the Finnish *-sti,* the English *-ly,* the French *-ment,* the Italian *-mente* and so on, are analysed as being word-class changing *inflectional* affixes, rather than derivational affixes - I will discuss this idea in more detail in the next sub-section.[31]

## 4.5.2. Evidence for Lexical "Adverb" Case

As we have seen in the previous sections, Finnish nominal manner adverbials always inflect for lexical case, the most frequent lexical case being the Adessive. If affixes like the Finnish *-sti* and so on, are to be analysed as inflectional endings, then it would be very reasonable to analyse also them as inflectional endings for lexical case. Another argument for an analysis of affixes like *-sti* as inflectional endings for lexical case is presented in various Finnish grammars; Nieminen (1937); Hakulinen (1941, 199ff.), Setälä (1948, 130ff.), Ravila (1953), and Pajunen (1998), in their discussions of inflectional and derivational morphology, show that in Finnish, many derivational "adverb-forming" affixes used to be, at some stage, classifed as inflectional endings for lexical case. But because such affixes have lost their productivity so that they can now only be used to express a limited range of adverbial meanings, they are typically reanalysed as being derivational affixes, rather than inflectional endings for lexical case. Under this line of reasoning, we would simply be dealing with a reassignment in the function of a morpheme from being an inflectional case ending to a derivational "adverb-forming" affix - this view could be supported by the fact that, while most of the "normal" productive inflectional case endings, such as the Adessive case ending, can still be used to express a wide range of adverbial meanings (eg manner, place, time), derivational adverb-forming affixes like *-sti* can only be used to express manner meaning.

In the present thesis, I propose that adverbs be analysed as adjectives and nouns inflecting and carrying a feature for lexical "adverb" case; a similar view is presented, among others, in Tuomikoski (1973), Emonds (1976, 12) and Radford (1988, 137ff.). I further propose that an analysis of adverbs as adjectives and nouns inflecting for lexical "adverb" case is compatible with the minimalist view on

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[31] For an opposing view, see Zwicky (1995).

language, and results in a more economical theory than previously. This is firstly because there is no need to establish the status of adverbs as a separate lexical category, a task that has proven difficult in the past. In work dating back to Chomsky (1970), it is often suggested that there exist some subsidiary categorial features which bring out a distinction between adverbs and adjectives. But if we treat adverbs as KPs, that is, as nouns and adjectives carrying an inflectional ending for lexical "adverb" case, the need for such subsidiary features does not arise and the division of lexical categories into four groups becomes more straightforward:[32]

N = [+N, -V]
V = [-N, +V]
Adj = [+N, +V]
P = [-N, -V]

Secondly, an analysis of adverbs as nouns and adjectives inflecting for lexical "adverb" case allows us to analyse Finnish manner adverbials like *nopea-sti* 'quick-Adv', *ääne-ti* 'sound'Adv', *kova-a* 'hard-Part' and *vauhdi-lla* 'speed-Adess' uniformly as having the form of KPs, rather than as having the form of both AdvPs and KPs:

(40) a. *Sirkku saapu-i nopea-sti.*
Sirkku-nom arrive-past-3sg fast
'Sirkku arrived fast'

b. *Sirkku saapu-i ääne-ti.*
Sirkku-nom arrive-3sg-past sound
'Sirrku arrived without a sound (ie quietly)'

c. *Sirkku juoks-i kova-a.*
Sirkku-Nom run-past-3sg hard-Part
'Sirkku run fast'

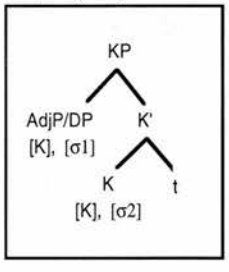
d. *Sirkku saapu-i vauhdi-lla.*
Sirkku-Nom arrive-past-3sg speed-Adess
'Sirkku arrived speedily/with speed'

Under the line of reasoning pursued here, each of the adjectival and nominal heads in [40a-d] is associated with a case feature [K] and a semantic feature [σ1] when it emerges from the numeration. The case feature [K] is checked by means of raising the AdjP or DP to Spec/KP, while the semantic feature [σ1] unites with the feature

[32] Note that under an analysis of prepositions and postpositions as lexically realised functional categories, their presence in this scheme would be problematic.

[σ2] of K, percolating to the maximal projection KP; it is then checked, at the point of merge, when the KP enters the derivation as a specifier of a Manner-related vP, against the corresponding feature on the complex v head. Diagram (4.57) describes the structure of *nopeasti, kovaa, ääneti,* and *vauhdilla:* in the first two constructions, an AdjP which is associated with a case(-related) feature [K:Adverb] or [K:Partitive] and a semantic feature [σ1] raises, either overtly or covertly, to Spec/KP, whereas in the latter two constructions, a *DP* which is associated with a feature [K:Adverb] or [K:Adessive] and [σ1] raises to Spec/KP:

Diagram (4.57)




Note that in Finnish, the "traditional" lexical cases are typically carried by nouns, whereas the "adverb" cases are carried by adjectives - this explains the observation made in Section 4.1. that adjectives do not usually inflect for lexical case. However, the tendency of nouns to prefer the "traditional" lexical cases and adjectives the "adverb" cases does not mean that nouns do not inflect for the "adverb" case at all, and vice versa.

Thirdly, an analysis of adverbs as nouns and adjectives inflecting for lexical "adverb" case results in a more economical theory than previously because all manner adverbials, having the same form and the same semantic feature specification, can be subjected to the same licensing conditions. Hence, they can be merged into the same structural positions, and they are also able to undergo movement in exactly the same way. This explains the similarities in their distribution (I will return to the licensing and distribution of different types of manner adverbials in Chapter Six):

(41) a. *Sirkku kävele-e <u>vauhdi-lla/</u> <u>kova-a/</u> <u>ontuma-lla/</u> <u>nopea-sti</u>.*
Sirkku-Nom walk-past-3sg speed-Adess/ hard-Part/ limp-3inf-Adess/ quick-Adv
'Sirkku walks with speed/ fast/ with a limp/ fast'

b. *Sirkku <u>vauhdilla/</u> <u>kovaa/</u> <u>ontumalla/</u> <u>nopeasti</u> kävelee.*
'Sirkku with speed/ fast/ with a limp/ fast walks'

c. *Kävelee Sirkku <u>vauhdilla/</u> <u>kovaa/</u> <u>ontumalla/</u> <u>nopeasti</u>.*
'Walks Sirkku with speed/ fast/ with a limp/ fast '

d. *?Kävelee vauhdilla/ kovaa/ ontumalla/ nopeasti Sirkku.*
'Walks with speed/ fast/ with a limp/ fast Sirkku'

e. *Vauhdilla/ kovaa/ ontumalla/ nopeasti Sirkku kävelee.*
'With speed/ fast/ with a limp/ fast Sirkku walks'

f. *Vauhdilla/ kovaa/ ontumalla/ nopeasti kävelee Sirkku.*
'With speed/ fast/ with a limp/ fast walks Sirkku'

An analysis of adverbs as nouns and adjectives inflecting for semantic "adverb" case also accounts not only for some well-known similarities but also *differences* between adjectives and adverbs. Considering the similarities first, adjectives and adverbs can be accompanied by the same set of modifiers because the category of the modified element is always an adjective:[33]

(42) a. *hurja-n nopea* *Finnish*
frantic-Gen quick
'very quick'

b. *hellyttä-vä-n suloinen*
touch-1pcp-Gen sweet
'touchingly sweet'

c. *hurja-n nopea-sti*
frantic-Gen quick-Adv
'very quickly'

d. *hellyttä-vä-n suloise-sti*
touch-1pcp-Gen sweet-Adv
'touchingly sweetly

Within the "adverb-case" hypothesis developed here, modified adjectives and adverbs are assigned the following types of structures:

[33] In Finnish, modifiers of adjectives appear in Spec/AdjP and have Genetive case. For discussion, see Vainikka (1993).

Diagram (4.58)

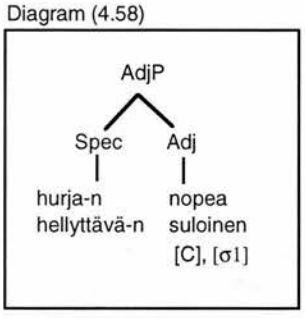
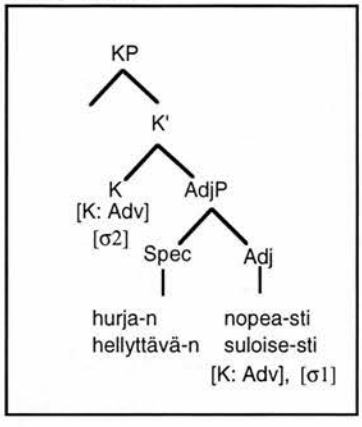



Diagram (4.59)




An analysis of adverbs as adjectives inflecting for semantic "adverb" case also explains why adverbs and adjectives are gradable in the same way - the following diagrams describe the structure of *parempi* 'better' and *paremmin* 'better-Adv' in Finnish:[34]

Diagram (4.60)

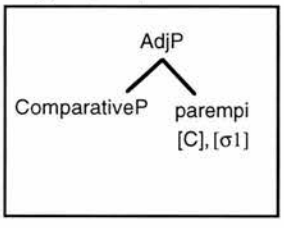
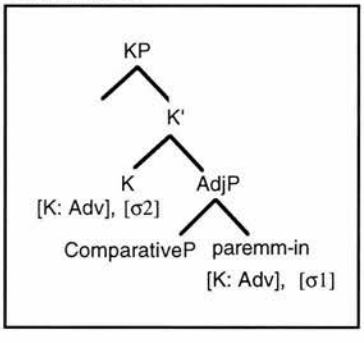



Diagram (4.61)




Considering now some *differences* between adverbs and adjectives, an analysis of adverbs as nouns and adjectives carrying an inflectional ending for lexical "adverb" case explains why adverbs cannot have case in the traditional sense, but adjectives can:

(43) a. **nopea-sti-lla*
fast-Adv-Adess

b. **nopea-sti-ssa*
fast-Adv-Iness

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[34] In keeping with Vainikka (1993), I assume that comparatives and superlatives consist of a ComparativeP or a SuperlativeP appearing in Spec/AdjP. In Hakulinen & Karlsson (1979), ComparativePs and SuperlativePs are analysed as Quantifier Phrases.

c. **vauhdi-lla-sti*
speed-Adess-Adv

d. **vauhdi-ssa-sti*
'speed-Iness-Adv'

e. *kova-a*
'hard-Part'

f. *luja-a*
'hard-Part'

[43a-d] are ruled out because in Finnish, a functional $K^0$ cannot select another KP as its complement, much in the same way as a functional $Voice^0$ cannot select another VoiceP as its complement. Under this line of reasoning, [44a-d] are ruled out for exactly the same reason as [43a-d] are:

(44) a. **vauhdi-lla-ssa*
speed-Adess-Iness

b. **vauhdi-ssa-lla*
speed-Iness-Adess

c. **kova-a-lla*
hard-Part-Adess

d. **kova-lla-a*
hard-Adess-Part

Note, however, the in languages such as Korean, a functional $K^0$ *can* select another KP as its complement - this means that Korean adverbs can appear in case-inflected forms:

(45) a. *halmeni-ka sonnye-ekey chenchen-hi-lul kara-ko malhayssta.*
granny-Nom granddaughter-Dat slowly-ADV-Acc go-compl said
'The granny told the granddaughter to go slowly'

Secondly, it is widely known that only the adjectives can take nominal and infinitival complements relatively freely - see eg Alexiadou (1997, 197ff.) and the references cited there:

(46) a. **ylpeä-sti puutarha-sta-an*
proud-Adv garden-Elat-Px

b. **innokkaa-sti puhu-ma-an*
eager-Adv talk-3inf-Illat

c. *ylpeä puutarha-sta-an*
proud garden-Elat-Px
'proud of her garden'

d. *innokas puhu-ma-an*
eager talk-3inf-Illat
'eager to talk'

Evidence from Finnish suggests, however, that the ability of adjectives to take nominal and infinitival complements freely, rather than being a property of adjectives as a lexical category, is really a property of adjectival *predicates.* [47] and [48] show that in Finnish, adjectival predicates must always inflect for Nominative or Partitive case (cf. Pajunen 1998). Crucially, adjectival predicates can never inflect for any of the lexical cases:

(47) a. *Sirkku on [ylpeä puutarha-sta-an].*
Sirkku-Nom be-pres-3sg proud-Nom garden-Elat-Px
'Sirkku is proud of her garden'

b. *Tytö-t ovat [ylpe-i-tä puutarha-sta-an].*
Girls-pl-Nom be-pres-3pl proud-pl-Part garden-Elat-Px
'The girls are proud of their garden'

c. *Sirkku on [innokas puhu-ma-an].*
Sirkku-Nom be-pres-3sg eager-Nom talk-3inf-Illat
'Sirkku is eager to talk'

d. *Tytö-t o-vat [innokka-i-ta puhu-ma-an].*
Girl-pl-Nom be-pres-3pl eager-pl-Part talk-3inf-Illat
'The girls are eager to talk'

(48) a. **Sirkku o-n [ylpeä-llä puutarha-sta-an].*
Sirkku be-pres-3sg proud-Adess garden-Elat-Px

b. **Tytö-t o-nvat[ylpe-i-llä puutarha-sta-an].*
Girl-pl-Nom be-pres-3pl proud-pl-Adess garden-Elat-Px

c. **Sirkku o-n [innokkaa-ssa puhu-ma-an].*
Sirkku-Nom be-pres-3sg eager-Iness talk-3inf-Illat

d. **Tytö-t o-vat [innokka-i-ssa puhu-ma-an].*
Girls-pl-Nom be-pres-3pl eager-pl-Iness talk-3inf-Illat

The idea that only adjectival predicates can take nominal and infinitival complements in Finnish is supported by the fact that, when the same adjectives function as premodifiers of nouns, rather than as the main predicates of their sentence, they can no longer appear with nominal and infinitival complements:

(49) a. **[ylpeä puutarha-sta-an] tyttö* (Cf. *puutarhastaan ylpeä tyttö*)
proud-NOM garden-Elat-Px girl-Nom
'a proud of her garden girl'

b. **[ylpe-i-tä puutarha-sta-an] tyttö-j-ä* (Cf. *puutarhastaan ylpeitä tyttöjä* )
proud-pl-PART garden-Elat-Px girl-pl-Part
'proud of their garden girls'

c. **[innokas puhu-ma-an] ihminen* (Cf. *puhumaan innokas ihminen*)
eager-NOM talk-3inf-Illat person
'an eager to talk person'

d. **[innokka-i-ta puhu-ma-an] ihmis-i-ä* (Cf. *puhumaan innokkaita ihmisiä* )
eager-pl-PART talk-3inf-Illat person-pl-Part
'eager to talk people'

Based on the preceding considerations, I propose that the sentences in [48] are ruled out because their adjectival predicates inflect for the wrong case - in the same way, I assume that sentences like [50] are ruled out because their adjectival predicates inflect for the wrong case. I also conclude that, rather than being a property of adverbs, the inability to take nominal and infinitival complements is a property of all non-predicate adjectivals:

(50) a. **Sirkku o-n [ylpeä-**sti** puutarha-sta-an].*
Sirkku-Nom be-pres-3sg proud-Adv garden-Elat-Px
'Sirkku is proudly of her garden'

b. **Sirkku o-n [innokkaa-**sti** puhu-ma-an].*
Sirkku-Nom be-pres-3sg eager-Adv talk-3inf-Illat
'Sirkku is eargerly to talk'

Adverbs also have a different distribution from adjectives. Considering the Finnish sub-clausal domain first, we can see that adverbs cannot function as modifiers of nouns:

(51) a. **kaunii-sti talo*
beautiful-Adv house-Nom

b. **kaunii-sti talo-ssa*
beautiful-Adv house-Iness

c. *kaunis talo*
beautiful-Nom house-Nom
'a beautiful house'

d. *kaunii-ssa talo-ssa*
beautiful-Iness house-Iness
'in a beautiful house'

However, the inability of adverbs to function as modifiers of nouns could be seen as a property of lexical case in general, rather than as a property of adverbs alone. Consider [52]:

(52) a. **kaunii-na talo*
beautiful-Ess house-Nom

b. **kaunii-lle talo-ssa*
beautiful-Allat house-Iness

It has been proposed, eg by Douglas-Brown (1996) and Vainikka (1996), that all modifiers of Finnish nouns must have their case and number agreement features checked against the corresponding features on the $N^0$ head, by virtue of (overt or covert) movement of both the modifier and the $N^0$ head to the appropriate DP-internal functional (Agr) projection. On these assumptions, the inability of both adverbs and other elements with lexical case to function as modifiers of nouns can be explained either by the fact that, because adverbs and other elements with lexical case have the form of KPs, they lack case and number agreement features which would drive their movement to the DP-internal functional projections or, alternatively, by the fact that, although the KPs have such features, there is a mismatch of features between the KP and the $N^0$ head so that the derivation results in a crash. Because there is no reasons to suppose that nouns like *talo* 'house' have semantic features which allow them to license KPs in their specifier positions, I will assume that the first analysis is the correct one, so that only AdjPs, but not KPs, can be merged as specifiers of $N^0$ heads.

Note, however, that constructions like [53a-b] are grammatical:

(53) a. *kaunii-na talo-na*
beautiful-Ess house-Ess

b. *kaunii-lle talo-lle*
beautiful-Allat house-Allat

c. *palane-i-na talo-i-na*
burn-pl-Ess house-pl-Ess

d. *palane-i-ssa talo-i-ssa*
burn-pl-Iness house-pl-Iness

In [53a-b], we can assume that the adjectives *kauniina* and *kauniille* have the form of $Adj^0$s/AdjPs, rather than KPs, when they enter the derivation; they are associated with case and number agreement features which need checking against the corresponding features on the $N^0$ head, by virtue of moving both the $Adj^0$/AdjP and

the $N^0$ head to the appropriate DP-internal functional (Agr) projection. Because the features of the $Adj^0$/AdjP and the $N^0$ match, the derivation converges at the interface levels.

Within the clausal domain, the different distribution of adverbs and adjectives can be observed from sentences such as [54a-b]:

(54) a. **Sirkku on töykeä-sti.*
Sirkku-Nom be-pres-3sg rude-Adv
'Sirkku is rudely'

b. *Sirkku on töykeä.*
Sirkku-Nom be-pres-3sg rude-Nom
'Sirkku is rude'

In [54], we are dealing with predicate adjectives. In Finnish, not only predicate adjectives but also predicate nominals must always inflect and carry a feature for Nominative or Partitive case - so again, we can assume that [54a] is ungrammatical for exactly the same reason as [55a-d] are ungrammatical - the predicate adjectives and nominals inflect for wrong case:

(55) a. **Sirkku on töykeä-ssä*
Sirkku-Nom be-3sg-pres rude-sg-Iness

b. **Tytö-t o-vat töyke-i-ssä.*
Girl-pl-Nom be-pres-3pl-rude-pl-Iness

c. **Sirkku on puheenjohtaja-lla*
Sirkku-Nom be-3sg-pres chairperson-sg-Adess

d. **Tytö-t o-vat puheenjohtaj-i-ssa.*
Girl-pl-Nom be-pres-3pl-chairperson-pl-Iness

(56) a. *Sirkku on töykeä.*
Sirkku-Nom be-3sg-pres rude-sg-Nom
'Sirkku is rude'

b. *Tytö-t o-vat töyke-i-tä.*
Girl-pl-Nom be-3pl-pres rude-Part
'The girls are rude'

c. *Sirkku on puheenjohtaja.*
Sirkku-Nom be-3sg-pres chairperson-sg-Nom
'Sirkku is the chairperson'

d. *Tytö-t o-vat puheenjohtaj-i-a.*
Girl-pl-Nom be-3pl-pres chairperson-pl-Part
'The girls are chainpersons'

Within the Finnish clausal domain, the different distribution of adverbs and

adjectives can also be observed from sentences like [57]. On the assumption that particular types of arguments and adverbials are merged as specifiers of particular heads which are associated with the necessary semantic feature specifications, we can conclude that in [57a] the semantic feature [σ] associated with the KP *töykeästi* is compatible with the semantic feature of the V *käyttäytyi* (or, rather, the semantic feature of the complex v containing the V *käyttäytyi*), whereas in [57b], the semantic feature [σ] of the AdjP *töykeä* is *not* compatible with the semantic feature of the V *käyttäytyi:*

(57) a. *Sirkku käyttäyty-i töykeä-sti.*
Sirkku-Nom behave-past-3sg rude-Adv
'Sirkku behaved rudely'

b. **Sirkku käyttäyty-i töykeä.*
Sirkku-Nom behave-past-3sg rude-Nom
'Sirkku behaved rude'

# 4.6. Conclusion

In this chapter, I discussed the internal structure of Finnish manner adverbials. I began by giving examples of different types of manner adverbials in Finnish. I then looked at the way in which structural and lexical case is checked in the bare theory and in Goverment and Binding theory. I proposed a system of structural and lexical case, arguing that nominal items with structural case are associated with a case feature [C] and a semantic feature [σ] while nominal items with lexical case are associated with a case feature [K] and a semantic feature [σ], when they emerge from the numeration. I proposed that the case feature [C] can be checked against a functional Agr head, or against a functional P head, while the case feature [K] can only be checked against a functional K head. Furthermore, the semantic feature [σ] percolates to the maximal projection DP, PP, KP: it is always checked at the point of merge, when the DP, PP or KP is selected and enters the derivation, against the semantic feature of the selecting $X^0$ head. Thus, in the system developed here, semantic feature checking provides a powerful way of ensuring that correct items are merged into the correct positions in the derivation.

After showing how the system of structural and lexical case works in practice, by providing an analysis of Finnish subjects, objects, indirect objects and adverbials, I proposed an analysis of adverbs as nouns and adjectives carrying lexical "adverb" case. Under this line of reasoning, adverbs are associated with a

case feature [K] and a semantic feature [σ] when they emerge from the numeration. I then presented evidence for an analysis of adverbs as nouns and adjectives carrying lexical "adverb" case. I argued that this analysis results in a more economical theory than previously, in the sense that adverbs and the other categories, because they have the same form, are subject to the same licensing conditions and have the same distribution.

## Chapter Five

# A Theory of Layered VPs

In this chapter, I discuss the original and derived (the pre- and post-movement) structure of Finnish sentences, establishing a basis for the study of the positions of Finnish manner adverbials in Chapter Six. In Section 5.1. I look at the structure of Finnish transitive, unergative, and unaccusative VPs. Based on Hale & Keyser (1993), I propose that Finnish VPs have a layered structure consisting of a lexical VP and one or more light vPs. I adopt the view that particular types of elements are inserted into particular structural positions, and hypothesize that arguments of the lexical V are merged as specifiers of light vPs, under semantic feature checking between the arguments and v heads. In Section 5.2. I discuss the types of arguments that can raise to subject position (ie to Spec/AgrSP) in Finnish. In Section 5.3. I examine the original and derived (ie the pre- and post-movement) positions of Finnish direct objects, indirect objects and locative adverbials (or, "frame adverbials"). I show, firstly, that functional projections can sometimes be interspersed with the light v projections so that there is no clear distinction between "the functional domain" and "the VP domain;" I then discuss some consequences of this for hierarchical structure and linear order.

## 5.1. A Theory of Layered VPs in Finnish

### 5.1.1. Preliminaries

Traditionally, verbs are divided into transitives and intransitives: the former take at least two arguments and assign two thematic roles. The latter take one argument and assign one thematic role. Intransitives are divided further into unergatives and unaccusatives. Unergatives have an external argument and assign Agent theta role; unaccusatives have

an internal argument and assign Theme theta role:[1]

*AGENT* *THEME*
(1) a. *Sirkku tapas-i Pulmu-n.* *Transitives*
Sirkku-Nom meet-past-3sg Pulmu-Acc
'Sirkku met Pulmu'

*AGENT* *THEME*
b. *Sirkku hajott-i surffilauda-n.*
Sirkku-Nom break-past-3sg surf board-Acc
'Sirkku broke the surf board'

*AGENT*
(2) a. *Sirkku laulo-i.* *Unergatives*
Sirkku-Nom sing-past-3sg
'Sirkku sang'

*AGENT*
b. *Sirkku kävele-e.*
Sirkku-Nom walk-pres-3sg
'Sirkku walks'

*THEME*
(3) a. *Sirkku saapu-i.* *Unaccusatives*
Sirkku-Nom arrive-past-3sg
'Sirkku arrived'

*THEME*
b. *Surffilauta hajos-i.*
Surf board-Nom break-past-3sg
'The surf board broke'

Earlier generative phrase structure theories distinguished between transitive, unergative, and unaccusative verbs, by means of base generating the subjects of both transitives and unergatives in Spec/VP and by moving them to Spec/IP for case reasons. Subjects of unaccusatives were base generated in complement of V positions. They were also moved to Spec/IP for case reasons:[2]

---

[1] For discussion on unergative and unaccusative verbs, see eg Burzio (1986), Hale & Keyser (1993) and Levin & Rappaport Hovav (1995), among many others. I am using the term unaccusative to cover unaccusative, passive and middle verbs. Although the middle construction seems to involve obligatory manner adverbials, it is not a frequently used construction in Finnish. I will not discuss middles here.

[2] The tree diagrams in (5.1) through (5.3) are in keeping with the VP internal subjects hypothesis in that the external argument of V is base generated in Spec/VP and moved, in languages where Spec/VP is not associated with case, to Spec/IP.

Diagram (5.1)

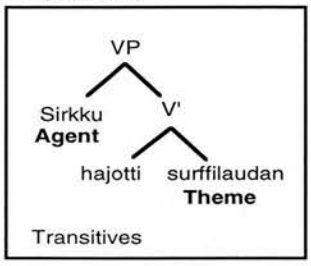



Diagram (5.2)

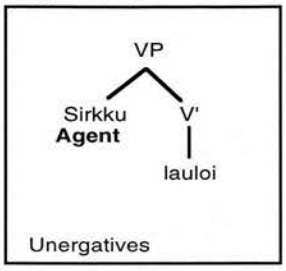
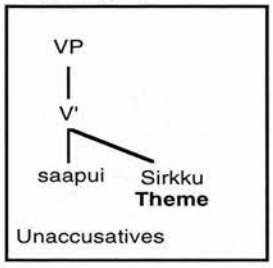


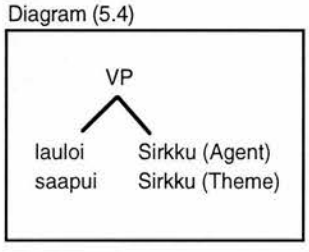

Diagram (5.3)




The fact that unaccusative verbs lack external arguments and fail to assign Accusative case to their internal arguments led Burzio (1986, 184ff.) to propose that verbs can theta mark an external argument if and only if they can also assign Accusative case; this is known as Burzio's Generalization.

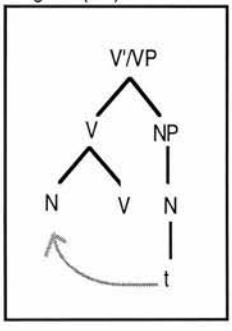
Bare phrase structure theory does not allow for non-branching projections. Because Merge is a binary and an asymmetrical operation, unergative and unaccusative VPs may seem to involve similar kinds of structures:

Diagram (5.4)




In order to maintain a distinction between unergative and unaccusative verbs, Chomsky (1995, 247f.; 315) adopts the view originally presented in Hale & Keyser (1993) that unergatives are really hidden transitives. According to Hale & Keyser, unergative verbs are derived from transitive verbs, by virtue of incorporating the $N^0$ head of the NP complement into an abstract $V^0$ head:

Diagram (5.5)




In Hale & Keyser's system, subjects of transitive and unergative verbs are base

generated in Spec/IP. This is essentially because the complements of these verbs are not predicates: if their subjects were base generated in Spec/VP, Hale & Keyser argue, they would fail to receive an interpretation at LF. But the complements of unaccusative verbs *are* predicates (ie rather than NPs, they are PPs or APs). Hence, Hale & Keyser conclude, they force the appearance of a subject in Spec/VP:

Diagram (5.6)

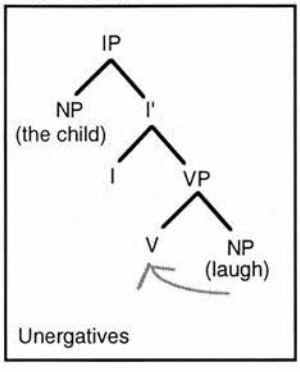
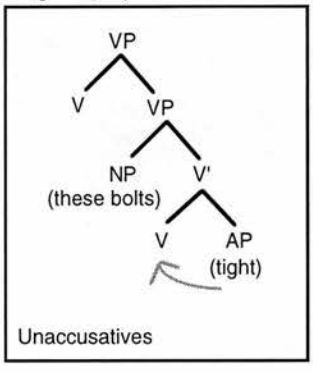



Diagram (5.7)




Although in Hale & Keyser's system the subjects of transitive and unergative verbs are base generated in Spec/IP, the main ideas that they present can be incorporated into the bare theory and the VP internal subjects theory, by assuming the existence of layered VP shells. This means that the structures illustrated in Diagrams (5.6) and (5.7) can be replaced by the ones given in (5.8) and (5.9):

Diagram (5.8)

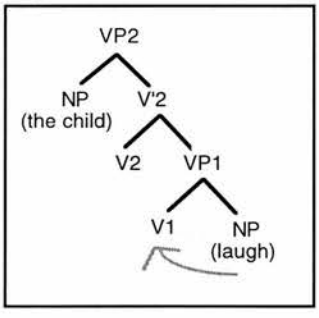
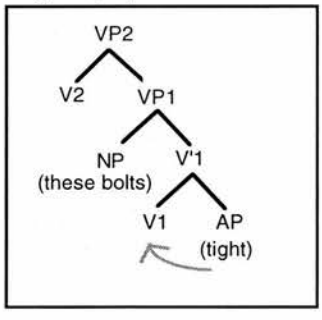



Diagram (5.9)




In the present thesis, I adopt the view that VPs can consist of layered V projections in a VP shell. Much in line with Hale & Keyser, I also assume that a particular argument of V is inserted into a particular structural position (eg the external argument of $V^0$ is merged as an upper Spec/VP, whereas the internal argument of $V^0$ is merged as a lower Spec/VP). Secondly, in Hale & Keyser's theory, the lexical $V^0$ is formed by means of incorporating the $X^0$ head of the XP complement into an abstract $V^0$, in a manner illustrated in Diagram (5.5). As a result, the "normal" external and internal arguments of V are merged as specifiers of layered V projections in a VP shell. In the present thesis, I will assume that the lexical VP is both minimal and maximal (ie

it is both a $V^0$ and a VP), and the arguments of V are merged as specifiers of layered V projections in a VP shell. Because incorporating $X^0$ heads of XP complements into abstract $V^0$s is not directly relevant for the topic of this thesis, I will not discuss it here in any closer detail - note, though, that an interesting possibility would be to assume, in line with Pesetsky (1995), that it is actually the syntax that introduces categorial features like V: this is done by projecting a verbal functional structure above an abstract "verbal" root. Under this view, one could argue that the $X^0$ head of the XP complement is essentially the "verbal" root.

## 5.1.2. Lexical VPs and Light vPs

In this sub-section, I discuss the pre-movement structure of Finnish VPs. I hypothesize that Finnish VPs consist of a lexical VP and one or more light vPs, and that arguments of the lexical V are merged as specifiers of light vPs in an VP shell, under semantic feature checking between the arguments and the complex light v heads.

As we have seen, transitive verbs select an external and internal argument and assign two thematic roles (typically Agent and Theme), while unergative verbs select an external argument and assign one theta role (typically Agent). Both transitives and unergatives can also select additional arguments and assign additional theta roles, including Experiencer, Goal (or, Benefactive/Malefactive, depending on the terminology that one chooses to adopt) and Location. Derivations with and without these additional arguments do not block each other, because they do not have the same numeration:[3]

*AGENT*
(4) a. **Pulmu hajott-i.*
Pulmu-Nom break-past-3sg

*THEME*
b. **Hajott-i surffilauda-n.*
Break-past-3sg surf board-sg-Acc

[3] As pointed out in Chapter One, I refer to arguments selected obligatorily by the lexical V as *obligatory arguments*, and to additional arguments as *optional arguments*, of V. These two terms are used only for convenience: within the bare theory all arguments of V are obligatory in the sense that, once they enter the numeration, they must be selected and inserted into the derivation (ie into an appropriate Spec/vP position). Much in line with Chomsky (1995), I assume that the derivation does not converge until all the items have been used from the numeration and all indices have been reduced to zero.

*AGENT* *THEME*
c. *Pulmu hajott-i surffilauda-n.*
Pulmu-Nom break-past-3sg surf board-sg-Acc
'Pulmu broke the surf board'

*AGENT* *MALEFACTIVE* *LOCATION* *THEME*
d. *Pulmu hajott-i Sirku-lta surffikilpailu-i-ssa surffilauda-n.*
Pulmu-Nom break-3sg Sirkku-Ablat surfing competition-pl-Iness surf board-sg-Nom
'Pulmu broke Sirkku's surf board in the surfing competition'

*AGENT*
(5) a. *Pulmu laulo-i.*
Pulmu-Nom sing-past-3sg
'Pulmu sang'

*THEME*
b. **Laulo-i aaria-n.*
Sing-past-3sg aria-sg-Acc

*AGENT* *THEME*
c. *Pulmu laulo-i aaria-n.*
Pulmu-Nom sing-past-3sg aria-sg-Acc
'Pulmu sang an aria'

*AGENT* *BENEFACTIVE* *LOCATION* *THEME*
d. *Pulmu laulo-i Sirku-lle makuuhuonee-ssa aaria-n.*
Pulmu-Nom sing-past-3sg Sirkku-Allat bedroom-sg-Iness aria-sg-Acc
'Pulmu sang Sirkku an aria in the bedroom'

Unaccusative verbs select an internal argument and assign Theme theta role. Like transitives and unergatives, Finnish unaccusatives can take optional arguments and assign optional theta roles. [6a-b] show that the Theme argument, when it is the only argument of V, must be realised as the subject of the sentence so that it appears in the normal subject position. [6c-d] show, in turn, that in sentences containing optional arguments of V, the Theme argument can appear in its normal direct object position:[4]

*THEME*
(6) a. *Surffilauta hajos-i.*
Surf board-sg-Nom break-past-3sg
'The surf board broke'

[4] I will discuss the status of *Sirkulta* and *surffikilpailuissa* as subjects in the next section. There is also an alternative analysis, according to which *surffilauta* is a postverbal subject in [6c-d]. For more discussion on Finnish postverbal subjects, see Setälä (1952), Hakulinen & Karlsson (1979, 158ff.), Karlsson (1983) and Vilkuna (1989, 44ff.; 150ff.) and (1996, 110ff.).

*THEME*

b. **Hajos-i surffilauta.*
Break-past-3sg surf board-sg-Nom

*MALEFACTIVE THEME*

c. *Sirku-lta hajos-i surffilauta.*
Sirkku-Ablat break-past-3sg surf board-sg-Nom
'Sirkku's surf board broke'

*LOCATION THEME*

d. *Surffikilpailu-i-ssa hajos-i surffilauta.*
Surfing competition-pl-Iness break-past-3sg surf board-sg-Nom
'A surf board broke in the surfing competition'

*MALEFACTIVE*

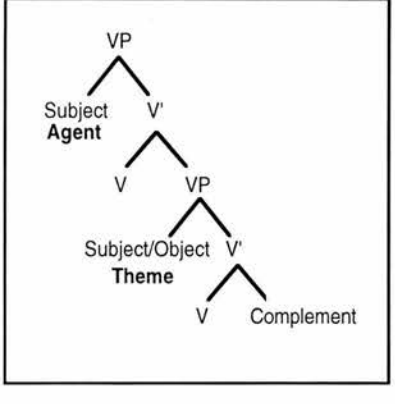
e. **Sirku-lta hajos-i.*
Sirkku-Ablat break-past-3sg

*LOCATION*

f. **Surffikilpailu-i-ssa hajos-i.*
Surfing competition-pl-Iness break-past-3sg

But what structural positions are the obligatory and optional arguments of V merged into and why? Let us begin by looking at an essentially non-minimalist approach to this question. According to Bowers (1993), the Agent subjects of transitive and unergative verbs are merged into an upper Spec/VP position - Bowers calls this the Spec/Pr(edicationP) but points out that it could also be seen as a projection of V - while the Theme subjects of unaccusative verbs are merged into a lower Spec/VP position. Note that in Bowers' system, the complement of V position is occupied by selected adverbials of manner, place and time; I will return to this briefly in Chapter Six:

Diagram (5.10)

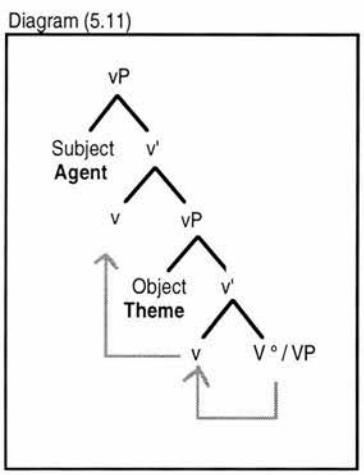



Bowers refers to the upper Spec/VP as the primary subject position and to the lower Spec/VP as the secondary subject position. He argues that in transitive and unergative constructions, the lower Spec/VP is the position of the direct object: this means that subjects of unaccusative verbs and objects of transitive and unergative verbs are merged

into the same structural position. Because the lower Spec/VP is associated with Theme theta role in both unaccusative, transitive, and unergative constructions, Bowers proposes that a particular structural position is always associated with a particular thematic role. The idea that there is a correspondence between structural positions and theta roles is formulated as the uniform theta assignment hypothesis (UTAH); for discussion, see Baker (1988; 1995; 1996), Larson (1988; 1990), Pesetsky (1995), Collins & Gruber (1996), and Gruber (1996), among many others.

Within bare phrase structure, the subjects of transitive and unergative verbs are also merged as specifiers of an upper V projection while the subjects of unaccusative verbs are merged as specifiers of a lower V projection. In line with Chomsky (1993, 1994; 1995), Koizumi (1995), Collins (1997), Kitahara (1997), and Radford (1997), I assume - as a first approximation - that the existence of the upper VP (ie the so-called light vP) is justified by theory internal arguments: thematically complex verbs give rise to a layered VP structure consisting of a lexical VP and one or more light vPs. By thematically complex I mean all transitive and unergative verbs and those unaccusative verbs which do not have a Theme subject, sentences like [4c-d], [5a,c-d], and [6a,c-d] being a case in point. I also assume that the movement of the lexical $V^0$ to light v is obligatory, takes place in the overt syntax, and is driven by a need to check some morphological features. Given these assumptions, Finnish transitive and unergative verbs selecting an Agent subject and a direct object give rise to the structure illustrated in Diagram (5.11) below - this structure will be modified as we go along:

Diagram (5.11)




If the movement of the lexical V to light v is driven by a need to check morphological features, then what morphological features are we dealing with? We could assume that we are dealing with categorial features so that a strong V-feature on the light v attracts and drives the movement of the lexical V to light v. Because categorial features are interpretable, they are not deleted when checked; thus, the lexical

V (or, the adjunction structure containing the lexical V) can still be attracted and continue movement to another light v projection. However, there is also an alternative analysis. It has been proposed that transitive and unergative verbs, but not unaccusative verbs, have a specific morphological affix which is associated with agentivity or causativity - see eg Koizumi (1995) and Pesetsky (1995). In languages like Japanese and Finnish, this morphological affix has an overt phonological realisation, whereas in languages like English, it has not. The Japanese data in [7a-c] is from Koizumi (1995, 103f.):

| | *Transitives* | *Unaccusatives* | | |
|---|---|---|---|---|
| (7) a. | *ake* | *ak* | 'open' | *Japanese* |
| b. | *sizume* | *sizum* | 'sink' | |
| c. | *tobas* | *tob* | 'fly' | |
| d. | *avata* | *avautua* | 'open' | *Finnish* |
| e. | *upottaa* | *upota* | 'sink' | |
| f. | *lennättää* | *lentää* | 'fly' | |
| g. | *open* | *open* | | *English* |
| h. | *sink* | *sink* | | |
| i. | *fly* | *fly* | | |

Given the theory of phrase structure in the minimalist program, I hypothesize that both transitives and unergatives, but not unaccusatives, are associated with an agentive or causative morpheme and feature [+F] when they emerge from the numeration:

| stem | + | agentive/causative morpheme |
|---|---|---|
| [+V] | | [+F] |

The feature [+F] needs checking in the syntax, in an appropriate functional projection. Because the presence or absence of this feature directly corresponds to the presence or absence of an agentive or causative light v projection, I propose that it is checked in this projection, by raising and adjoining the lexical V to light v. Under this line of reasoning, the light v must be associated with a strong agentive or causative feature - this is a very welcome situation, because it allows us to justify the presence of the light v by output conditions (by semantic interpretation at LF), rather than by merely theory internal arguments. Because the Agent argument is merged as the specifier of this agentive or causative light vP, I further propose that the agentive or causative feature [+F] is essentially the same as the semantic feature [σ]: this line of reasoning allows Agent arguments to be merged as specifiers of light v heads, under semantic feature checking, in a manner discussed in Chapter Four.

Under the line of reasoning pursued here, light vPs can be treated as some kind of functional projections: the way in which the lexical V raises to light v, to have its features checked, is analogous to the way in which the lexical V raises and adjoins to, say, a functional Tense/Mood, to have its Tense/Mood features checked. The way in which arguments are merged as specifiers of light v heads is also analogous to the way in which adverbials like *now* and *then* are merged as specifiers of functional Tense/Mood heads, under semantic feature checking betwee the adverbials and the Tense/Mood heads. Diagrams (5.12) and (5.13) illustrate the (simplified) way in which Agent arguments are merged as specifiers of light v heads, and adverbials like *now* and *then* are merged as specifiers of Tense/Mood heads:

Diagram (5.12)

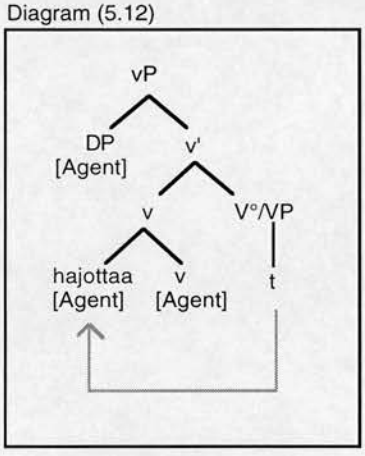
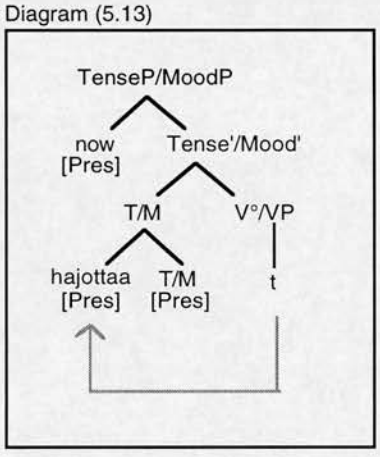



Diagram (5.13)




The idea that transitive and unergative verbs involve the presence of a lexical VP and a light vP so that external (Agent) arguments are merged as specifiers of the latter, is also discussed elsewhere; see Chomsky (1993; 1994; 1995), Koizumi (1995), Pesetsky (1995), Collins (1997), and Kitahara (1997), among many others. However, in this thesis, I will be taking the idea of lexical VPs and light vPs even further. I propose, firstly, that the lexical V is associated with one or more (possibly phonetically zero) morphemes which are associated with semantic features and values like [Agent], [Benefactive], and [Theme]. Each of these semantic features/values needs checking in an appropriate light v projection, via raising and adjunction of the lexical V to light v. I further propose that the number and types of light vPs directly corresponds to the number and types of semantic features on the lexical V - for example, if the lexical V is associated with three semantic features which have the values [Agent], [Benefactive], and [Theme], then the derivation must contain a lexical VP and an "Agent-related," a "Benefactive-related", and a "Theme-related" light v projection. Just like thematic roles, I hypothesize that the semantic features of V are hierarchically ordered with regard to each other so that the least prominent feature is checked first, the most

prominent feature last. On the basis of Larson (1988; 1990), Grimshaw (1990, 8f.), Baker (1995; 1996), and Stroik (1995), I take the universal hierarchy of semantic features, and hence also the universal hierarchy of light v projections, to be

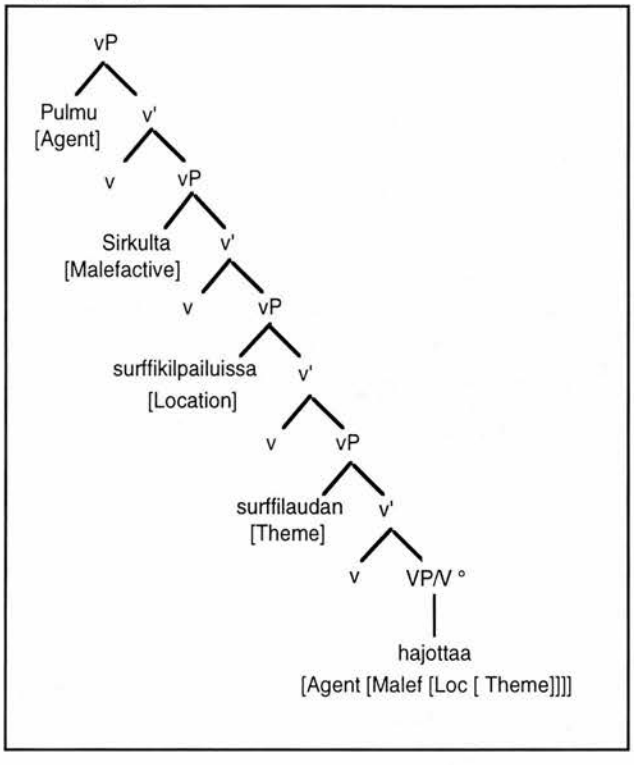
*Prominence* →
[Agent [Experiencer [Goal/Source/Location [Theme [Oblique]]]]]
← *Order of merge*

so that Agent is the most prominent, Oblique the least prominent, semantic feature. Much in line with Larson (1988; 1990), I also take the term *Oblique* to cover different types of semantic features and values, including [Manner], [Place] and [Time] - I will return to these features and values in Chapter Six.

In order to clarify what is being proposed, let us assume that we are dealing with a lexical V which is associated with four different semantic features when it emerges from the numeration: these features have the values [Agent], [Malefactive], [Location] and [Theme] - a lexical V of this kind appears in [4d] above. Given the assumption that the semantic features of V are always hierarchically ordered, according to a strict universal hierarchy, we get the following pre-movement structure (I will return to the mutual ordering of the Malefactive and the Location arguments briefly):[5]

[5] Ie the syntactic projection of arguments is determined in feature specification of the verb when it emerges from the numeration. The fact that this specification largely derives from the semantics of the verb means that syntactic derivations are largely based on properties that are semantic in nature.

Diagram (5.14)




Because the least prominent semantic feature of V is [Theme], the "Theme-related" vP is the lowest light vP. The lexical V raises from its original position to the head of this light vP, in order to check its semantic feature [Theme] against the corresponding feature on the light v. The DP *surffilaudan* 'surf board' is selected and merged as a specifier of this light vP, under semantic feature checking between the DP and the complex V+v head. The complex V+v head then raises upwards to the head of the next light vP which, given the universal hierarchy of semantic features, is the "Location-related" light vP. The complex V+v checks its semantic [Location] feature against the corresponding feature on the light v. The KP *surffikilpailuissa* 'in the surfing competition' is then merged as a specifier of this light vP, under semantic feature checking between the KP and the light v head (at this point, we are dealing with a complex V+v+v head). The derivation proceeds in this way until the lexical V has no further semantic features left; once the lexical V has no further semantic features left (ie once all its semantic features have been checked by virtue of movement and adjunction to an appropriate light v), the derivation cannot contain further light vPs and no further arguments of the lexical V can enter the derivation. Note, however, that the arguments of V which are merged as specifiers of light v projections in a manner described above, may not always have an overt phonological realisation; this is to allow derivations to contain "implicit" arguments, such as "implicit" temporal and locative arguments of

V. I will return to "implicit" arguments briefly in Chapter Seven.

Apart from the fact that theta theory is replaced by semantic feature checking between nominal arguments and light v heads, the line of reasoning pursued here is close to the one pursued in Larson (1988; 1990), Bowers (1993), Collins & Thráinsson (1993; 1996), Koizumi (1995), Collins (1997), and Kitahara (1997), among many others. In Larson's and Bowers' systems, raised elements such as the lexical V are also allowed to participate in theta role assignment to nominal arguments in Spec/VP positions, by virtue of raising and adjoining to $V^0$ heads of layered VP projections. Although in the system developed here we are dealing with complex v heads of layered vP projections, the underlying idea remains the same: raised elements such as the lexical V are able to participate in the semantic feature checking operation between the nominal argument and the complex light v head. We are also treating the specifier-head relation between the nominal argument and the complex V+v head as a local relation so that each semantic feature and value is checked locally, within the maximal projection of v containing V.[6]

## 5.2. The Position of Finnish Subjects

In the previous section, I discussed the pre-movement structure of Finnish sentences and argued that VPs consist of a lexical VP and one or more light vPs. In this section, I discuss very briefly the post-movement positions of Finnish subjects. My aim is to show, firstly, that some KPs are able to undergo movement to the normal subject position (ie to Spec/AgrSP) in Finnish whereas others, including KP manner adverbials, are not. I then discuss some possible reasons for this.

As we have seen in Chapter Two, Finnish subjects raise overtly to Spec/AgrSP. This can be established by observing the behaviour of the negative verbal element *ei:* when *ei* raises to the head of AgrS, the subject precedes it in linear order, and when *ei* continues to raise to the head of C, the subject follows it. [8] through [10] contain examples of Agent subjects of Finnish transitive and unergative verbs, and of Theme subjects of Finnish unaccusative verbs:

---

[6] Note, though, that the view that raised elements such as the lexical V assign thematic roles to arguments in Spec/vP positions contrasts with the one held in Chomsky (1995, 312ff.) and related work. In Chomsky's system, heads of chains can neither assign nor receive thematic roles: for example, in the nontrivial chain CH = (V, ..., t) the raised lexical V head would not be able to assign a thematic role to the nominal argument in Spec/VP.

*AGENT*

(8) a. *Pulmu e-i hajotta-nut surffilauta-a.*
Pulmu-Nom not-3sg break-past surf board-sg-Part
'Pulmu did not break a surf board'

*AGENT*

b. *Tiedä-n, ette-i Pulmu hajotta-nut surffilauta-a.*
Know-pres-1sg that+not-3sg Pulmu-Nom break-past surf board-sg-Part
'I know that Pulmu did not break a surf board'

*AGENT*

(9) a. *Pulmu e-i laula-nut aaria-a.*
Pulmu-Nom not-3sg sing-past aria-sg-Part
'Pulmu did not sing an aria'

*AGENT*

b. *Tiedän, ette-i Pulmu laula-nut aaria-a.*
Know-pres-1sg that+not-3sg Pulmu-Nom sing-past-aria-sg-Part
'I know that Pulmu did not sing an aria'

*THEME*

(10) a. *Surffilauta e-i hajon-nut.*
Surf board-sg-Nom not-3sg break-past
'The surf board did not break'

*THEME*

b. *Tiedä-n, ette-i surffilauta hajon-nut.*
Know-pres-1sg that+not-3sg surf board-sg-Nom break-past
'I know that the surf board did not break'

The Theme arguments of Finnish unaccusative verbs do not have to be realised as subjects when the sentence also contains a more prominent argument, such as Malefactive or Location:[7]

*MALEFACTIVE THEME*

(11) a. *Sirku-lta hajos-i surffilauta.*
Sirkku-Ablat break-past-3sg surf board-sg-Nom
'Sirkku's surf board broke'

*LOCATION THEME*

b. *Surffikilpailu-i-ssa hajos-i surffilauta.*
Surfing competition-pl-Iness break-past-3sg surf board-sg-Nom
'A surf board broke in the surfing competition'

---

[7] Actually, whether or not the most prominent argument of V is realised as the subject of the sentence and raises to Spec/AgrSP is related to more complicated matters. In particular, DPs which are associated with the semantic feature and value [Agent], although they are the most prominent arguments of V, cannot raise to Spec/AgrSP in neutral, syntactically unmarked sentences if they are nonspecific and indefinite. As this is not directly relevant for the topic of my thesis, I will not discuss it here.

According to Setälä (1952), Hakulinen & Karlsson (1979, 158ff.) and Karlsson (1983, 76; 94ff.), the postverbal Theme arguments in [11a-b] should be analysed as postverbal subjects. However, as Vilkuna (1996, 156ff.) points out, the subjecthood of Finnish postverbal DPs is open to dispute. Although the status of Finnish postverbal DPs in [11a-b] is beyond the topic of this thesis, it is still interesting to see that the sentence initial KPs behave in exactly the same way with regard to *ei* as "normal" Finnish subjects - when *ei* raises to AgrS, the KPs precede it in linear word order and when it raises to C, they follow it:[8]

*MALEFACTIVE*
(12) a. *Sirku-lta e-i hajon-nut surffilauta.*
Sirkku-Ablat not-3sg break-past surf board-sg-Nom
'Sirkku's surf board did not break'

*MALEFACTIVE*
b. *Tiedä-n, ette-i Sirku-lta hajon-nut surffilauta.*
Know-pres-1sg that+not-3sg Sirkku-Ablat break-past surf board-sg-Nom
'I know that Sirkku's surf board did not break'

*LOCATION*
(13) a. *Surffikilpailu-i-ssa e-i hajon-nut surffilauta.*
Surfing competition-pl-Iness not-3sg break-past surf board-sg-Nom
'A surf board did not break in the surfing competition'

*LOCATION*
b. *Tiedän, ette-i surffikilpailu-i-ssa hajon-nut surffilauta.*
Know-pres-1sg that+not-3sg surfing competition-pl-Iness break-past
surf board-sg-Nom
'I know that a surf board did not break in the surfing competition'

The idea that Finnish sentence initial KPs appear in the normal subject position is also supported by the following data:[9]

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[8] For more discussion on the status of sentence initial KPs as subjects, and of postverbal DPs as direct objects, see eg Bresnan & Kanerva (1989) and the references given there. For criticism of Bresnan & Kanerva's analysis, see Levin & Rappaport Hovav (1995).

[9] Schot-Saikku (1993) calls sentences like [14a] Experiencer sentences, arguing that they form a sub-category of existential sentences. According to her, Finnish existential sentences are "syntactically characterized by an initial NP in a locative case, the verb invariably in the third person singular, and subject alternation in nominative and partitive." Experiencer sentences are also discussed in Hakulinen & Karlsson (1979, 301ff.).

*EXPERIENCER MANNER*
(14) a. *Sirku-lle käv-i köpelö-sti.*
Sirkku-Allat fare-past-3sg bad-Adv
'Things turned out badly for Sirkku'

*EXPERIENCER*
b. **Sirku-lle käv-i.*
Sirkku-Allat fare-past-3sg

*MANNER*
c. **Käv-i köpelö-sti.*
Fare-past-3sg bad-Adv

According to Holmberg & Nikanne (1994), the Finnish Spec/AgrSP position must always be filled by phonologically overt material (with the possible exception of some passive and null-argument constructions; see eg [16] and [17] below). Under this view, the grammaticality of [14a], even though it only contains KPs, strongly suggests that KPs must be able to raise from their original positions of merge to Spec/AgrSP.

However, [15a-c] show that, even though Finnish KP manner adverbials may also seem to be able to raise from their original positions of merge to Spec/AgrSP, it is doubtful if they actually do. In [15a] we are dealing with a heavily focussed construction, [15b] is only marginally acceptable, and [15c] is ungrammatical. This suggests that in sentences like [15a], the manner adverbials might appear in some focus-related specifier position, rather than in Spec/AgrSP, and that movement to this position is not permitted when the sentence contains the negative verbal element *ei:*[10]

*MANNER EXPERIENCER*
(15) a. *Köpelö-sti käv-i Sirku-lle.*
Bad-Adv fare-past-3sg Sirkku-Allat
'It was for SIRKKU (not for Pulmu) that things turned out badly'

*MANNER EXPERIENCER*
b. *?Köpelö-sti e-i käy-nyt Sirku-lle.*
Bad-Adv not-3sg fare-past Sirkku-Allat
'It was not for SIRKKU that things turned out badly'

*MANNER EXPERIENCER*
c. **Tiedä-n, ette-i$_i$ köpelö-sti t$_i$ käy-nyt Sirku-lle.*
Know-pres-3sg that+not-3sg bad-Adv fare-past Sirkku-Allat

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[10] In [15b-c] the marginality/unacceptability cannot merely be due to the fact that in negative sentences, a less marginal argument cannot raise to Spec/AgrSP across a more prominent argument. This is because it is still possible to raise a less prominent argument across a more prominent argument in sentences like [9a-b] and [12a-b]: *Tiedän ettei aariaa laulanut PULMU* 'I know that it was not PULMU who sang the aria' and *Tiedän ettei surffilauta hajonnut SIRKULTA* 'I know that it was not SIRKKU's surf board that broke'. Both of these sentences are heavily focussed.

Sentences like [16] and [17] provide further evidence for the claim that Finnish KP manner adverbials cannot raise to Spec/AgrSP: *sataa* 'rain' is a verb which does not take any obligatory arguments. However, when it selects a locative or a place adverbial as an optional argument, this adverbial must raise to Spec/AgrSP in neutral, syntactically unmarked sentences. However, when it selects a *manner* adverbial as an optional argument, the manner adverbial must usually remain in its original position of merge:[11]

(16) a. *Sata-a.*
Rain-Pres-3sg
'It rains'

*LOCATION*
b. *Kiina-ssa sata-a.*
China-Iness rain-pres-3sg
'It rains in China'

*LOCATION*
c. *Kiina-ssa e-i sada.*
China-Iness not-3sg rain-pres
'It does not rain in China'

*LOCATION*
d. *Tiedä-n, ette-$i_i$ Kiina-ssa $t_i$ sada.*
Know-pres-1sg that+not-3sg China-Iness rain-pres
'I know that it does not rain in China'

*LOCATION*
e. *??Sata-a Kiina-ssa.*
Rain-pres-3sg China-Iness
'It DOES rain in China'

*LOCATION*
f. **E-$i_i$ sada $t_i$ Kiina-ssa.*
Not-3sg rain-pres China-Iness

*LOCATION*
g. **Tiedä-n ette-$i_i$ sada $t_i$ Kiina-ssa.*
Know-Pres-1sg that+not-3sg rain-pres China-Iness

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[11] The presence of another, heavily focussed adverbial makes some of the sentences in [17] marginally acceptable: *??Kaatamalla sataa KIINASSA* 'It is in CHINA that it rains hard' and *??Kaatamalla ei sada KIINASSA* 'It is not in CHINA that it rains hard'. The presence of adverbials such as *ainakaan* 'not ... however' also alters the acceptability for some speakers: *Tiedän ettei ainakaan KAATAMALLA sada (vaikka vettä tihuuttaakin)* 'I know that it is not raining HARD however, (even though it is still drizzling)'. The important point is that, while [16b-d] have focus-neutral readings, [17b-d] involve very strong contrastive focussing.

(17) a. *Sata-a.*
Rain-Pres-3sg
'It rains'

*MANNER*
b. **Kaata-ma-lla sata-a.*
Pour-3inf-Adess rain-pres-3sg

*MANNER*
c. **Kaata-ma-lla e-i sada.*
Pour-3inf-Adess not-pres-3sg rain-pres

*MANNER*
d. **Tiedä-n ette-$i_i$ kaata-ma-lla $t_i$ sada.*
Know-pres-1sg that+not-3sg pour-3inf-Adess rain-pres

*MANNER*
e. *Sata-a kaata-ma-lla.*
Rain-pres-3sg pour-3inf-Adess
'It is raining hard'

*MANNER*
f. *E-$i_i$ sada $t_i$ kaata-ma-lla.*
Not-3sg rain-pres pour-3inf-Adess
'It is not raining hard'

*MANNER*
g. *Tiedä-n ettei-$_i$ sada $t_i$ kaata-ma-lla.*
Know-pres-1sg that+not-3sg rain-pres pour-3inf-Adess
'I know that it is not raining hard'

Why are some KPs able to raise relatively freely to Spec/AgrSP in Finnish while others, including KP manner adverbials, are not? We could try to relate the ability of KPs to raise to Spec/AgrSP to the question of whether they have any subject-verb agreement features. In Chapters One and Two, we have seen that in Finnish active sentences, the Spec/AgrSP position is involved in the checking of person and number agreement features between the subject and the finite verb. We have also seen that only DPs inflecting and carrying a feature for Nominative case are able to show full person and number agreement with the finite verb:

(18) a. *Pulmu hajott-i surffilauda-n.*
Pulmu-sg-Nom break-past-3sg surf board-sg-Acc
'Pulmu broke a surf board'

b. *Tytö-t hajott-i-vat surffilauda-n.*
Girl-pl-Nom break-past-3pl surf board-sg-Acc
'The girls broke a surf board'

Secondly, in Finnish passive sentences, the Spec/AgrSP position is involved in the

checking of some kind of passive agreement features between the subject and the finite verb: DPs inflecting and carrying a feature for Nominative, Accusative, or Partitive case can show passive agreement with the finite verb:

(19) a. *Sirkku ammu-tt-i-in.*
Sirkku-Nom shoot-pass-past-pass.agr
'Sirkku was shot'

b. *Häne-t ammu-tt-i-in.*
She-Acc shoot-pass-past-pass.agr
'She was shot'

c. *Sirkku-a/hän-tä ammu-tt-i-in.*
Sirkku-Part/she-Part shoot-pass-past-pass.agr
'Sirkku/she was shot at'

d. *Tytö-t ammu-tt-i-in.*
Girl-pl-Nom shoot-pass-past-pass.agr
'The girls were shot'

e. *Heidä-t ammu-tt-i-in.*
Girl-pl-Acc shoot-pass-past-pass.agr
'They were shot'

f. *Tyttö-j-ä/hei-tä ammu-tt-i-in*
Girl-pl-Part/they-Part shoot-pass-past-pass.agr
'The girls/they were shot at'

[20a-b] and [21a-b] suggest that the Finnish Spec/AgrSP position could also be involved in the checking of a third type of agreement features between the subject and the finite verb: indefinite DPs which inflect and carry a feature for Partitive case and some KPs show this third type of agreement with the finite verb:

(20) a. *Kakku-a putos-i pöytäliina-lle.*
Cake-Part fall-past-3sg tablecloth-sg-Allat
'Some cake fell on the tablecloth'

b. *Kakku-j-a putos-i pöytäliina-lle.*
Cake-pl-Part fall-past-3sg tablecloth-sg-Allat
'Some cakes fell on the tablecloth'

(21) a. *Sirkul-ta hajos-i surffilauta.*
Sirkku-Ablat break-past-3sg surf board-sg-Nom
'Sirkku's surf board broke'

b. *Tytö-i-ltä hajos-i surffilauta.*
Girl-pl-Ablat break-past-3sg surf board-sg-Nom
'The girls' surf board broke'

Based on [18] through [21], we could conclude that the Finnish Spec/AgrSP

position is involved in the checking of at least three different types of agreement features between the subject and the finite verb - we could refer to these features as person and number agreement features (eg [18]), passive agreement features (eg [19]) and, for the lack of a better term, "default" or "abstract" agreement features (eg [20] and [21] - note that in Finnish, this "default" or "abstract" agreement is always for the third person singular). We could then assume that some KPs have "default" or "abstract" agreement features which permit them to raise to Spec/AgrSP whereas others, including KP manner adverbials, lack such agreement features altogether. And because they lack agreement features, they cannot be attracted and raise to Spec/AgrSP. This line of reasoning is parallel to that pursued in McGinnis (1998). In her system, lexical case is divided further into quirky case and inert case, so that elements which have structural or quirky lexical case are visible for movement to A-positions such as Spec/AgrSP, whereas elements which have inert lexical case are not. McGinnis also shows how, in many languages, elements with structural case can trigger full person and number agreement with the finite verb whereas elements with quirky lexical case can only trigger "default" or "abstract" agreement . Under this line of reasoning, the difference between Finnish KPs like *Kiinassa* in [16] and *kaatamalla* in [17] could then be that, even though both have lexical case, the former have quirky lexical case, whereas the latter have inert lexical case which cannot be attracted, driving movement to Spec/AgrSP.

## 5.3. VP Internal Functional Projections

In this section, I discuss the pre- and post-movement positions of Finnish direct objects, indirect objects and locative ("frame") adverbials, concentrating on the relation between hierarchical structure and linear order.

### 5.3.1. VP Internal Functional Projections and Word Order

In Travis (1992) the subjects of transitive verbs are merged into an upper Spec/VP position labelled Spec/VP1, whereas direct objects are merged into a lower Spec/VP position labelled Spec/VP2. In between the two VPs, Travis has an aspectual functional projection labelled AspP: the AspP indicates whether the embedded lexical VP2 denotes a complete or an incomplete event:

$[_{VP1}$ **Subject** $[_{AspP}$ **Object$_i$** $[_{VP2}$ **t$_i$** $[_{V'}$ XP ]]]]

The direct object raises from its original position of merge to Spec/AspP for feature checking. This line of reasoning is in keeping with the view presented in Chapter Two that Finnish direct objects have an aspectual feature [±Completed] which correlates with the Accusative-Partitive case alternation - this feature needs checking in the syntax, driving overt movement to an aspectual functional projection.

VP-internal functional projections are also discussed elsewhere. Collins & Thráinsson (1993; 1996) see their model as a natural extension of Travis' system to explain double object constructions. They argue that indirect objects are merged as specifiers of VP2, and direct objects as complements of V2. They further argue that indirect objects raise to the specifiers of a higher AgrOP, and that direct objects raise to the specifiers of a lower AgrOP, for case feature checking. Although the projection labelled T(ense)P is given no real semantic characterization, Collins & Thráinsson (1993; 1996) suggest that it could have an aspectual function of some kind or be a defective category so that it lacks independent temporal properties altogether:[12]

$[_{AgrOP}$ **IO$_i$** $[_{VP1}$ **Subject** $[_{TP}$ $[_{AgrOP}$ **DO$_j$** $[_{VP2}$ **t$_i$** $[_{V'2}$ $V^02$ **t$_j$** ]]]]]]

In Koizumi (1995), the indirect object is also merged as a specifier of VP while the direct object is merged as a complement of V - a similar view is presented in Stroik (1995). Just like Collins & Thráinsson, Koizumi assumes that the indirect object raises to a higher Spec/AgrOP, and the direct object raises to a lower Spec/AgrOP, for case feature checking. Koizumi refers to the higher AgrOP as AgrOidP, in order to distinguish between the two AgrO projections:

$[_{VuP}$ **Subject** $[_{AgrOidP}$ **IO$_i$** $[_{AgrOP}$ **DO$_j$** $[_{VP}$ **t$_i$** $[_{V'}$ V **t$_j$** ]]]]]]

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[12] In Finnish the VP internal TP could correspond to PcpP - recall that Finnish Pcp heads are associated with temporal features such as [±Past]. The fact that participial verbs precede direct objects would support this analysis:

(i) *Sirkku o-n hajotta-nut surffilauda-n.*
Sirkku-Nom be-pres-3sg break-2pcp surf board-Acc
'Sirkku has broken the surf board'

(ii) *Sirkku o-n hajotta-va surffilauda-n.*
Sirkku-Nom be-pres-3sg break-1pcp surf board-Acc
'Sirkku will break the surf board'

In the systems proposed in Travis (1992), Collins & Thráinsson (1993; 1996) and Koizumi (1995), the pre-movement position of the subject argument is higher up in the structure than the post-movement position of the direct object. In Koizumi's system, the pre-movement position of the subject argument is even higher up in the structure than the post-movement position of the *indirect* object. Secondly, in all these systems, the indirect object is merged into a higher structural position than the direct object, and the indirect object is also raised to a higher structural position than the direct object, for feature checking. If both the indirect and direct object have the form of DPs so that they must both be raised to an appropriate Spec/AgrOP, the structures given in Collins & Thráinsson and Koizumi directly generate the linear order indirect object-direct object. The assumption that these structures directly generate this linear order is based on the view that linear order directly reflects structural hierarchy, and vice versa:

(22) a. *Sirkku gave Pulmu a cat.* *English*
*Sirkku told Pulmu the news.*

b. *Sirkku gav Pulmu en katt.* *Swedish*
*Sirkku berättade Pulmu nyheterna.*

If, on the other hand, the indirect object has the form of a KP or a PP, the structures given in Collins & Thráinsson and Koizumi predict the linear order direct object-indirect object. This is because neither KPs nor PPs have case features which would need checking and which would drive movement to a clausal functional projection. But because the direct object must still undergo movement to an appropriate Spec/AgrOP for case feature checking, it ends up preceding the indirect object in linear order in sentences with neutral, syntactically unmarked word order:[13]

(23) a. *Sirkku gave a cat to Pulmu.* *English*
*Sirkku told the news to Pulmu.*

b. *Sirkku gav en katt till Pulmu.* *Swedish*
*Sirkku berättade nyheterna till Pulmu.*

In languages such as Japanese, a numeral quantifier can sometimes be stranded in place

[13] This statement is based on the assumption that all Benefactive/Recipient arguments are merged into a specific position in the derivation, irrespective of their form (DP, KP, PP). Larson (1988; 1990) argues that dative indirect objects appear in a higher structural position than direct objects, while indirect objects which have the form of PPs appear in a lower structural position. This view is also discussed in Baker (1988; 1995; 1996), Collins & Thràinsson (1993; 1996), and Koizumi (1995), among many others.

when the direct object raises to Spec/AgrOP. This supports the analysis that a direct object is merged into a lower structural position than the KP indirect object, but that it raises to a higher structural position than the Spec/vP occupied by the indirect object - the Japanese data and glosses in [24a-b] are from Koizumi (1995, 108):

(24) a. *John-ga piza-o Mary-ni 2-kire ageta.* *Japanese*
John-Nom pizza-Acc Mary-Dat 2-clitic gave
'John gave two slices of pizza to Mary'

b. John-ga [$_{AgrOP}$ piza-o$_i$ [$_{AgrO'}$ [$_{VP}$ Mary-ni [$_{V'}$ [ t$_i$ 2-kire ] … ]]]]

In Chapter Four, we have seen that Finnish indirect objects always have the form of KPs - we have also seen that KPs have no case features left which would need checking and which would drive movement to Spec/AgrOP or Spec/AspectP. But Finnish direct objects, having the form of DPs, are associated with a strong case feature [C] which needs to be checked before the operation Spell-out, in an appropriate clausal functional projection. Given the structures and the system proposed by Collins & Thráinsson and Koizumi, we would now expect Finnish direct objects to precede indirect objects in all neutral, syntactically unmarked sentences, in the same way as English, Swedish, and Japanese direct objects precede KP and PP indirect objects in neutral, syntactically unmarked sentences (cf. [23] and [24] above). But examples like [25] show that Finnish direct objects can either precede or *follow* indirect objects in linear ordering:

(25) a. *Sirkku anto-i surffilauda-n poja-lle.* *Finnish*
Sirkku-Nom give-past-3sg surfboarf-Acc boy-Adess
'Sirkku gave a/the surfboard to a/the boy'
('It was to a/the boy that Sirkku gave a/the surf board')

b. *Sirkku kerto-i emävalhe-en poja-lle.*
Sirkku-Nom tell-past-3sg huge lie-Acc boy-Adess
'Sirkku told a/the huge lie to a/the boy'
('It was to a/the boy that Sirkku told a/the huge lie')

c. *Sirkku anto-i poja-lle surffilauda-n.*
Sirkku-Nom give-past-3sg boy-Adess surfboard-Acc
'Sirkku gave a/the boy a surfboard'

d. *Sirkku kerto-i poja-lle emävalhe-en.*
Sirkku-Nom tell-past-3sg boy-Adess huge lie-Acc
'Sirkku told a/the boy a huge lie'

Similar facts about the mutual ordering of direct and indirect objects hold for languages like German: direct objects can either precede or follow indirect objects. According to

Laenzlinger (1998), German direct objects are associated with a strong case feature which needs checking in an appropriate clausal functional projection (ie in an appropriate Agr projection) before the derivation reaches Spell-out. But in German indirect objects, Laenzlinger argues, all case feature checking takes place phrase-internally so that there is no need for further movement to a functional Agr projection - the data and glosses in [26] are from Laenzlinger (1998, 260; 296):

(26) a. *...weil der Doktor die Pille dem Patienten gegeben hat.* *German*
...because the$_{[+nom]}$ doctor the$_{[+acc]}$ pills the$_{[+dat]}$ patient given has
'...because the doctor gave the pill to the patient'

b. *...weil ich einen Brief an den Direktor geschrieben habe.*
...because I a$_{[+acc]}$ letter to the$_{[+acc]}$ director written have
'...because I wrote a letter to the director'

c. *...weil der Doktor dem Patienten die Pille gegeben hat.*
...because the$_{[+nom]}$ doctor the$_{[+dat]}$ patient the$_{[+acc]}$ pills given has
'...because the doctor gave the pill to the patient'

d. *...weil ich an den Direktor einen Brief geschrieben habe.*
...because I to the$_{[+acc]}$ director a$_{[+acc]}$ letter written have
'...because I wrote a letter to the director'

On the assumption that the systems proposed by Collins & Thràinsson and Koizumi predict the linear ordering DO-IO when the indirect object has the form of a KP or a PP, how can we account for the variation in [25] and [26]? First and foremost, there is a tendency for some speakers to interpret [25a-b] as being slightly focussed in Finnish: if we use a question/answer test to determine the focus structure of the sentences in [25], it is doubtful if they can all serve as answers to the same question (eg *What happened?*). This could mean that [25a-b] have been derived from [25c-d] by means of movement: the direct object could have been raised overtly to a left-branching specifier of a functional projection which is higher up in the structure than the Spec/vP occupied by the indirect object. Alternatively the indirect object could have been raised overtly to a right-branching specifier of a FocusP so that it ends up following, rather than preceding, the direct obejct in linear ordering - for analyses of this kind, see eg Belletti & Shlonsky (1995) and Zubizarreta (1998).[14] Under this line of reasoning, however, we would also have to assume that in [25c-d], because these sentences have

[14] Note, though, that right-branching specifier positions cannot be maintained within the LCA and the bare theory.

neutral syntactically unmarked word order, the indirect objects still occupy in their original Spec/vP positions whereas the direct objects, because they are associated with a strong case feature [C] which needs checking before the derivation reaches Spell-out, appear in their normal Spec/AgrOP or Spec/AspectP positions. Because hierarchical structure directly reflects linear ordering and vice versa, we would have to conclude that the Spec/vP occupied by Finnish indirect objects is a higher structural position than the derived, post-movement position of Finnish direct objects. In other words, contra Collins & Thràinsson and Koizumi, we would have to assume the following (post-movement) structure for Finnish sentences which have neutral, syntactically unmarked word order (irrelevant details omitted):

$[_{vP}$ **IO** $[_{v'}$ v $[_{AgrOP}$ **DO$_i$** $[_{AgrO'}$ AgrO $[_{AspectP}$ **t$_i$** $[_{Aspect'}$ Aspect $[_{vP}$ **t$_i$** $[_{v'}$ v $[_{VP}$ … ]]]]]]

Some support for this structure, so that the indirect object appears in a higher structural position than the direct object at Spell-out, is provided by the fact that the former are able to c-command and bind into the latter in sentences which have focus-neutral interpretation. [27a-b] show that an indirect object is able to bind a direct object reflexive, whereas [27c-d] show that an indirect object quantifier is able to bind an anaphoric element inside a direct object, but not vice versa; [27e-f] show, in turn, that a negative element like *tuskin* 'hardly' inside an indirect object can bind a negative polarity item such as *mitään* 'anything' inside a direct object, but not vice versa:

(27) a. *?Näyt-i-n poja-lle$_i$ itse-nsä$_i$ (peili-stä).* *Finnish*
Show-past-1sg boy-Adess self-Acc-Px (mirror-Elat)
'I showed the boy$_i$ himself$_i$ (in the mirror)'

b. **Näyt-i-n itse-lle-en$_i$ poja-n$_i$ (peili-stä)*
Show-past-1sg self-Adess-Px boy-Acc (mirror-Elat)
'I showed himself$_i$ the boy$_i$ (in the mirror)'

c. *Anno-i-n [joka poja-lle]$_i$ surffilauta-nsa$_i$.*
Give-past-1sg each boy-Adess surfboard-Px
'I gave each boy his surf board'

d. **Anno-i-n omistaja-lle-en$_i$ [joka surffilauda-n]$_i$.*
Give-past-1sg owner-Adess-Px each sucfboard-Acc
'I gave its owner each surf board'

e. *Anno-i-n [tuskin kene-lle-kään] mitä-än.*
Give-past-1sg hardly anyone-Adess-Clitic anything-Part
'I gave hardly anyone anything'

f. **Anno-i-n kene-lle-kään [tuskin mitä-än].*
Give-past-1sg anyone-Adess-Clitic hardly anything-Part
'I gave anyone hardly anything'

There is evidence from a number of languages that (KP-)indirect objects can c-command and bind into the direct objects in sentences which have focus-neutral interpretation - in fact, Marantz (1993) goes as far as suggest this is the universal c-command relation between a Goal (or, Recifpient; Benefactive...) indirect object and a Theme direct object. Some relevant discussion on the IO-DO word order, and on the relation between indirect and direct objects, can also be found in Larson (1988; 1990), Jackendoff (1990), Bowers (1993), Baker (1995; 1996), Koizumi (1995), Stroik (1995), and McGinnis (1998).

Sentences like [28] show that the lexical V and the Theme direct object can form a quasi-idiomatic constituent which excludes the indirect object; at the same time, examples of the lexical V and the indirect object forming a constituent which excludes the Theme direct object are much more rare. This strongly supports the idea that direct objects are merged into a lower Spec/vP position than indirect objects, so that they combine with the lexical V before the indirect objects; this idea is also supported by the hierarchy of thematic roles/semantic features proposed in Grimshaw (1990) and Stroik (1995), and in Sub-section 5.1.2. above. Because quasi-idiomatic expressions are compositional, they can be broken up by normal movement operations such as movement of the lexical V to AgrS, and the direct object to the specifiers of AgrOP and AspectP, respectively - for a similar view, see Roberts (1987). However, sentences like [29] show that these quasi-idiomatic interpretations can only be retained in sentences in which the indirect object appears in between the lexical V and the Theme direct object, ie in sentences in which all elements appear in their "normal" hierarchical positions. On the assumption that [29] involve some kind of focus movement, we could come up with an analysis according to which quasi-idiomatic interpretations can only be retained in sentences which do not involve focus movement to a left-branching specifier of a functional projection or to a right-branching specifier of a FocusP - in other words, the fact that the quasi-idiomatic interpretation cannot be retained in [29] could be taken to provide support for idea that IO-DO is the neutral ordering, while DO-IO has been derived by means of movement:

(28) a. *Sirkku näytt-i poja-lle taivaan merki-t.*
Sirkku-Nom show-past-3sg boy-Allat heaven-Gen sign-pl-Acc
'Sirkku gave the boy hell'

b. *Sirkku näytt-i lääkäri-lle keskisorme-a.*
Sirkku-Nom show-past-3sg doctor-Allat middle finger-Part
'Sirkku gave the doctor the finger'

(29) a. *Sirkku näytt-i taivaan merki-t poja-lle.*
Sirkku-Nom show-past-3sg heaven-Gen sign-pl-Acc boy-Allat
'Sirkku showed heaven's signs to the boy' — ie she showed the moon, stars, planets etc. to the him.

b. *Sirkku näytt-i keskisorme-a lääkäri-lle.*
Sirkku show-past-3sg middle finger-Part doctor-Allat
'Sirkku showed her middle finger to the doctor' — ie there was something wrong with her middle finger and she asked to doctor to take a look at it.

However, the variation between the IO-DO and the DO-IO word order, as well as the unavailability of the quasi-idiomatic interpretation in the linear DO-IO ordering, could also be attributed to the fact that there is sometimes a slight change in interpretation between these to orders which has nothing to do with the focus stucture of the sentence. On the basis of Danish, Herslund (1986) argues that the IO-DO ordering is typically interpreted as involving an abstract relation, whereas the DO-IO ordering often involves a more concrete locative relation. Similar facts seem to hold for Finnish - while the [30a-b] receive very abstract readings, [30c-d] imply that a kiss or a kidney are concrete objects which can change location from A to B:

(30) a. *Sirkku anto-i poja-lle suudelma-n.*
Sirkku-Nom give-past-3sg boy-Allat kiss-Acc
'Sirkku gave a/the boy a kiss'

b. *Sirkku tarjos-i poja-lle munuais-ta-an.*
Sirkku-Nom offer-past-3sg boy-Allat kidney-Part-Px
'Sirkku was offering the boy to have her kidney'

c. *Sirkku anto-i suudelma-n poja-lle.*
Sirkku-Nom give-past-3sg kiss-Acc boy-Allat
'Sirkku gave a/the kiss to the boy'

d. *Sirkku tarjos-i munuais-ta-an poja-lle.*
Sirkku-Nom offer-past-3sg kidney-Part-Px boy-Allat
'Sirkku was offering her kidney to the boy' — ie she was handing her detached kidney over to the boy'

In addition to focus-related movement and a change from abstract to a more concrete reading of the sentence, there is also an alternative way to explain the word order variation in [25] and [26]. Vilkuna (1989, 65ff.) observes that in Finnish, phenomena such as specificity and in/definiteness affect the mutual ordering of direct and indirect objects: if the direct object is interpreted as containing old information (ie

if it is specific and definite), it typically precedes the indirect object in linear order. If, however, the direct object is interpreted as containing *new* information (ie if it is non-specific and indefinite), it typically *follows* the indirect object in linear order - Vilkuna (1989, 67) illustrates this in the following way:

| | | |
|---|---|---|
| Theme > | Goal/Benefactive/Recipient > | Theme |
| Old/Definite | | New/Indefinite |

Laenzlinger (1998, 279ff.) observes that in German, the mutual ordering of direct and indirect objects is also affected by phenomena like specificity and in/definiteness. He then argues that German specific and definite objects have a strong case feature which needs checking and drives overt, pre-Spell-out movement to Spec/AgrO. But German non-specific and indefinite objects have a *weak* case feature which drives *covert, post-Spell-out* movement to this position. In other words, all specific and definite objects must leave their original VP-internal positions before the operation Spell-out, whereas all non-specific and indefinite objects must remain in these positions until *after* the operation Spell-out. Laenzlinger (1998, 305) further argues that German specific and definite *indirect* objects may, but they do not necessarily have to, also move to a Spec/AgrO - crucially, they may undergo movement to Spec/AgrOP positions even though they have no case features left which would need further checking in such positions (Laenzlinger assumes that German indirect objects have the form of KPs or PPs so that all case feature checking can take place KP- or PP-internally).

Based on the preceding considerations, we could come up with an analysis according to which Finnish direct objects are merged into a lower Spec/vP position than Finnish indirect objects. All specific and definite direct objects would then have to raise to Spec/AgrOP or Spec/AspectP in the overt syntax, ie before the operation Spell-out, while all non-specific and indefinite objects would have to raise to such positions covertly, *after* the operation Spell-out. In the former case, we would end up with the DO-IO ordering, in the latter, with the IO-DO ordering. However, an analysis of this kind would involve a number of empirical and theory-internal problems; firstly, it would not allow us to make any predictions about the mutual ordering of Finnish direct and indirect objects when they are both specific and definite, or non-specific and indefinite - in particular, we would have to adopt some extra assumptions to be able to explain why both the IO-DO and the DO-IO ordering can sometimes involve elements which are both specific and definite, or non-specific and indefinite. Secondly, the idea that indirect objects may raise optionally in the overt syntax when they are specific and definite would be against the standard mnimalist idea that movement is always obligatory and is driven by a need to check some morphological features. It would also

not be very elegant or restrictive to say that a nominal item α either may or may not raise overtly, just to get the word order facts right.

Thirdly, the fact that specificity and in/definiteness are related to case features and to case feature checking in a functional AgrP would be problematic for Finnish. Crucially, it would force us to conclude that in sentences like [31a], the direct object, just because it is interpreted as being specific and definite, has a strong case feature [C] which drives its overt movement to Spec/AgrOP while in [30b], because it is interpreted as being non-specific and indefinite, it has a *weak* case feature [C] which drives *covert* movement to this position:

(31) a. *Sirkku anto-i surffilauda-n poja-lle.* *Finnish*
Sirkku-Nom give-past-3sg surfboarf-Acc boy-Adess
'Sirkku gave the surfboard to a/the boy'

b. *Sirkku anto-i poja-lle surffilauda-n.*
Sirkku-Nom give-past-3sg boy-Adess surfboarf-Acc
'Sirkku gave to a/the boy a surfboard'

But in the previous chapters, we have seen that, rather than a single case feature [C], a nominal item α is associated with a number of different case-related features, including transitivity-related, aspectual, and subject-verb agreement features. We have also seen that each of these features needs checking in an appropriate functional projection before the derivation reaches Spell-out. If we now adopt the view that sometimes, just because an item α is interpreted as being non-specific and indefinite, these other case-related features can be checked in the covert syntax, ie *after* the operation Spell-out, then we would immediately have to explain why they would *ever* have to checked in the overt syntax. And if a feature for non-specificity and indefiniteness is enough to make all the other case-related features weak, so that they can only be checked after the operation Spell-out, then we would have difficulties in explaining why in the DO-IO ordering, when both the indirect and the direct object are non-specific and indefinite, the direct object has to undergo overt, pre-Spell out movement. We would also be forced to adopt some extra assumptions, in order to explain why sentences can still have indefinite subjects appearing in Spec/AgrSP: in other words, nothing in the theory discussed so far should be able to drive the overt movement of non-specific and indefinite nominal items such as *laiva* 'ship' and *lapsi-a* 'children' to Spec/AgrSP in sentences like [32a-d]:[15]

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[15] In Chapter Four, it was suggested the functional D heads have a feature for specificity and in/definiteness which allows them to attract and drive the movement of N heads to D. If this feature is now associated with case feature checking, it is unclear what drives the movement of N to D.

(32) a. *Laiva$_i$ uppos-i* $t_i$. *Finnish*
Laiva-Nom sink-past-3sg
'A/some ship sank'

b. *Laiva$_i$ upote-tt-i-in* $t_i$.
Laiva-Nom sink-pass-past-pass.agr
'A/some ship was sunk'

c. *Lapse-t$_i$ leikki-vät* $t_i$ *takapiha-lla.*
Child-pl-Nom pplay-past-3pl backyard-Adess
'The children were playing in the backyard'

d. *Lapsi-a$_i$ leikki* $t_i$ *takapiha-lla.*
Child-pl-Part play-past-3sg backyard-Adess
'Some children were playing in the backyard'

The idea that the strength of case features is related to phenomena such as specificity and in/definiteness is also problematic for the analysis of Finnish and German *indirect* objects. According to Laenzlinger, indirect objects have the form of KPs or PPs, and all case feature checking takes place KP- or PP-internally. But the question that arises is this: if case features are related to phenomena such as specificity and in/definiteness, then how is it possible to have the case features checked KP- or PP-internally but at the same time assume that the feature for specificity and in/definiteness remains visible to the computational system of language, so that it is able to drive the overt, optional movement of KPs and PPs to an appropriate functional Agr projection?

Although only some properties of the Finnish IO-DO and DO-IO variation have been discussed above, both empirical and theory-internal considerations suggest that IO-DO, rather than DO-IO, should be considered the more neutral, syntactically unmarked order, in the sense that it reflects the "normal" hierarchical structure while the DO-IO ordering involves focussing and movement to a FocusP. Assuming that, in sentences with neutral, syntactically unmarked word order, indirect objects remain in their original positions of merge while the direct objects raise overtly to Spec/AspectP and to Spec/AgrOP, I propose, contra Collins & Thràinsson and Koizumi, that the original position of Finnish indirect objects is a higher structural position than Spec/AgrOP, so that we get the following type of post-movement structure (irrelevant details omitted):

$[_{vP}$ **IO** $[_{v'}$ v $[_{AgrOP}$ **DO$_i$** $[_{AgrO'}$ AgrO $[_{AspectP}$ **t$_i$** $[_{Aspect'}$ Aspect $[_{vP}$ **t$_i$**
$[_{v'}$ v $[_{VP}$ … ]]]]]]

Let us now turn to look at Finnish locative ("frame") adverbials briefly. Based on the discussion in Chapter Four, we can see that these also have the form of KPs. Because KPs have no case features which would need further checking in a clausal functional projection, they are allowed to remain in their original positions of merge (ie in their original Spec/vP positions) at the interface levels. [33] show that Finnish locative adverbials behave in the same way as Finnish indirect objects, with regard to direct objects: while [33c-d] have neutral, syntactically unmarked word order, [33a-b] can be interpreted as being slightly focussed and as involving movement to a FocusP:

(33) a. *Sirkku sö-i ankka-a ravintola-ssa.*
Sirkku-Nom eat-past-3sg duck-Part restaurant-Iness
'Sirkku ate duck in a/the restaurant'
('It was in a/the restaurant that Sirkku ate duck')

b. *Sirkku juoks-i maailmanennätykse-n olympialais-i-ssa.*
Sirkku-Nom run-past-3sg world record-sg-Acc olympic-pl-Iness
'Sirkku ran a/the world record in the Olympics'
('It was in the Olympics that Sirkku ran a/the world record')

c. *Sirkku sö-i ravintola-ssa ankka-a.*
Sirkku-Nom eat-past-3sg restaurant-Iness duck-Part
'Sirkku ate in the restaurant duck'

d. *Sirkku juoks-i olympialais-i-ssa maailmanennätykse-n.*
Sirkku-Nom run-past-3sg olympic-pl-Iness world record-sg-Acc
'Sirkku ran in the Olympics a world record'

On the assumption that [33c-d] have the more neutral, syntactically unmarked word order, we can conclude that the original position of merge of Finnish locative adverbials is also higher up in the structure than the post-movement position of Finnish direct objects (ie higher up in the structure than Spec/AgrOP) - we get the following type of structure (irrelevant details omitted; note that this structure is supported by the hierarchy of thematic roles proposed in Grimshaw (1990)):

$[_{vP}$ **Loc** $[_{v'}$ v $[_{AgrOP}$ **DO$_i$** $[_{AgrO'}$ AgrO $[_{vP}$ **t$_i$** $[_{v'}$ v $[_{VP} \ldots ]]]]]]$

However, sentences like [34a-b] and [34c-d] suggest that there is no constraint on the mutual ordering of Finnish indirect objects and locative adverbials - all the sentences in [34] have equally unmarked word-order:

(34) a. *Pulmu anto-i Sirku-lle ranna-lla surffilauda-n.*
Pulmu-Nom give-past-3sg Sirkku-Allat beach-adess surf-board-sg-Acc
'Pulmu gave Sirkku on the beach a surf board'

b. *Pulmu anto-i ranna-lla Sirku-lle surffilauda-n.*
Pulmu-Nom give-past-3sg beach-Adess Sirkku-Allat surf-board-sg-Acc
'Pulmu gave on the beach to Sirkku a surf board'

c. *Pulmu kerto-i Sirku-lle juhl-i-ssa emävalhe-en.*
Pulmu-Nom tell-past-3sg Sirkku-Allat party-pl-Iness huge lie-sg-Acc
'Pulmu told Sirkku in the party a huge lie'

d. *Pulmu kerto-i juhl-i-ssa Sirku-lle emävalhe-en.*
Pulmu-Nom tell-past-3sg party-pl-Iness Sirkku-Allat huge lie-sg-Acc
'Pulmu told in the party to Sirkku a huge lie'

The fact that in sentences like [34], it does not seem to matter what the mutual ordering of the indirect objects and locative adverbials is suggests that Finnish VPs have one of the following (partial) post-movement structures:

$[_{vP}$ **IO** $[_{v'}$ v $[_{vP}$ **Loc** $[_{v'}$ v $[_{AgrOP}$ **DO$_i$** $[_{AgrO'}$ AgrO $[_{vP}$ **t$_i$** $[_{v'}$ v $[_{VP} \ldots ]]]]]]$

$[_{vP}$ **Loc** $[_{v'}$ v $[_{vP}$ **IO** $[_{v'}$ v $[_{AgrOP}$ **DO$_i$** $[_{AgrO'}$ AgrO $[_{vP}$ **t$_i$** $[_{v'}$ v $[_{VP} \ldots ]]]]]]$

However, if it is true that the semantic features of lexical verbs are hierarchically ordered with regard to each other so that the light vPs hosting the arguments of the lexical verb also end up being hierarchically ordered, then these structures are problematic for our analysis. Given the assumption that hierarchical structure always directly reflects linear word order and vice versa, it suggests that the same semantic features of V can be hierarchically ordered in at least two different ways, when V emerges from the numeration. As a result, two different hierarchical structures and linear orders are produced. I will discuss this in more detail in the next sub-section.

## 5.3.2. Hierarchical Structure vs Linear Order

If hierarchical structure always completely reflects linear ordering and vice versa, the sentences in [34a-b] and [34c-d], because they differ in linear ordering, must also differ in their hierarchical structure so that in each case, the same lexical item $\alpha$ appears in a different structural position. Although one could come up with an analysis according to which sentences like [34a-b] and [34c-d] differ in their hierarchical structure, it is difficult to find motivation for it. Let us discuss some reasons for this, before proceeding to propose an alternative analysis.

One could argue, firstly, that the different linear orders in [34a-b] and [34c-d]

reflect different "base-generated" hierarchical structures - on the assumption that all semantic features of V are hierarchically ordered, this would mean that same semantic features of V can be hierarchically ordered in different ways, when the V emerges from the numeration. In other words, the same lexical V could be specified either [Agent [Benefactive [Location [Theme]]]] or [Agent [Location [Benefactive [Theme]]]]. The different feature specifications could then produce different hierarchical structures and, given that hierarchical structure directly reflects linear ordering, different linear orders. A related analysis would be to assume that, while some semantic features of V are hierarchically ordered with regard to each other according to a strict universal hierarchy, others, such as [Benefactive] and [Location], are not. Within this line of reasoning, a lexical V which is associated with features like [Benefactive] and [Location] when it emerges from the numeration, would be able to check these features in whichever order the "Benefactive-related" and "Location-related" light v heads happen to enter the derivation. If the "Benefactive-related" light v enters the derivation first, then, given the assumption that arguments are merged into Spec/vP positions under semantic feature checking, we would get the situation illustrated in Diagram (5.15); if the "Location-related" light v enters the derivation first, we would get the situation illustrated in Diagram (5.16):

Diagram (5.15)

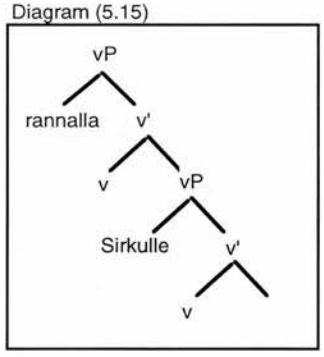
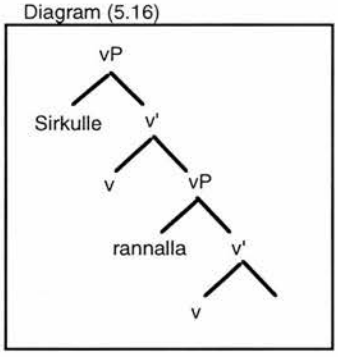



Diagram (5.16)




But both of these system have problems: firstly, they require us to abandon the idea that all functional and light v projections are hierarchically ordered according to a strict universal hierarchy. Secondly, they force us to adopt some extra assumptions, in order to explain why some functional and light v projections are nevertheless hierarchically ordered with regard to each other, while others are not. In particular, we must be able to explain why "Agent-related" light v projections are hierarchically ordered with regard to "Benefactive-" "Location-" and "Theme-related" light v projections, and why "Benefactive-" and "Location-related" projections are also hierarchically ordered with regard to "Theme-related" projections, but why "Benefactive-" and "Location-related" projections are not hierarchically ordered with

regard to each other. Thirdly, it is not very elegant or restrictive to say that once a derivation is formed in one way, and once in another way with exactly the same meaning, by the computational system of language.

We could alternatively argue that the different linear orders in [34a-b] and [34c-d], even though they have the same underlying "base-generated" structure, result from movement. According to this line of reasoning, while one of the sentences might directly reflect the original "base-generated" hierarchical structure, the other reflects a *derived* hierarchical structure. However, although the idea that different linear orders are a result of movement is able to account for sentences such as [25] and [33] which involve a slight change in the focus structure of the sentence, it is highly problematic for sentences like [34a-b] and [34c-d]. This is because within the minimalist framework, movement is driven by feature checking, a morphological property. But in [34a-b] and [34c-d], it is unclear what would drive the movement of the indirect object and the locative adverbial across one another as it is not immediately obvious what features they would have to check, and in what structural positions these checking operations would take place. Because they have the form of KPs, they have no case features left which would need checking and which would drive their overt movement to the appropriate clausal functional projections. And because they display free linear ordering without necessarily entailing any focussing effects, it is not reasonable to suppose that they have some kind of focus features either which would drive their overt movement to the specifier of a FocusP.

Because the analyses discussed so far involve problems, I will continue to assume that in sentences such as [34a-b] and [34c-d], one and only one hierarchical structure is produced - this allows us to maintain the idea that all semantic features of a lexical V are hierarchically ordered according to a strict universal hierarchy, when the V emerges from the numeration. Because all arguments of V are merged as specifiers of light vPs in a VP-shell structure, under semantic feature checking, they also end up being hierarchically ordered according to a strict universal hierarchy. However, rather than assuming that the different linear orders in [34a-b] and [34c-d] result from movement, I propose a modified version of Kayne's theory of LCA.

Let us begin by examining the post-movement structure of sentences like [34a-b] and [34c-d] briefly (irrelevant details omitted):

$[_{AgrSP}$ **Subj$_i$** $[_{AgrS'}$ $V_j$+AgrS $[_{vP}$ $t_i$ $[_{v'}$ $t_j$ $[_{vP}$ **Loc** $[_{v'}$ $t_j$ $[_{vP}$ **IO** $[_{v'}$ $t_j$ $[_{AgrOP}$ **DO$_k$**

$[_{AgrO'}$ $t_j$ $[_{vP}$ $t_k$ $[_{v'}$ $t_j$ $[_{VP}$ $t_j$ ]]]]]]

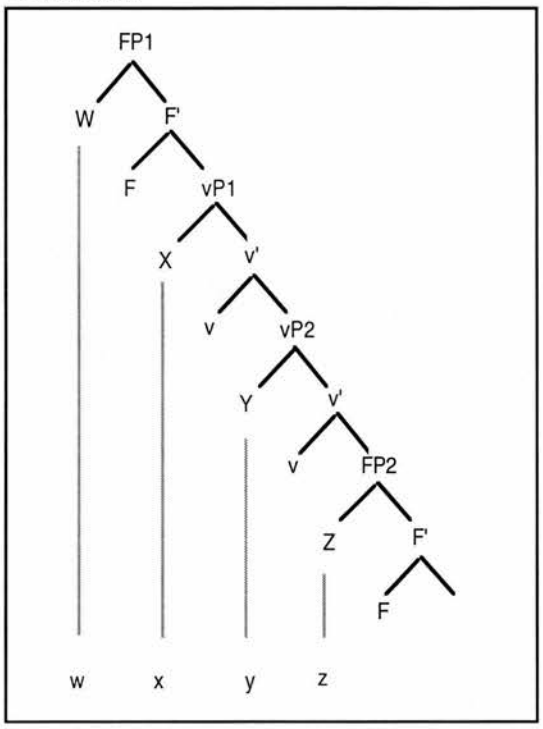
We can see that all arguments of V are merged as specifiers of light vPs in a VP-shell

structure. The subject and the direct object are associated with strong case-related features which need checking and drive their overt movement to the appropriate specifiers of functional projections. But the locative adverbial and the indirect object, because they have the form of KPs, are associated with no such features - instead, they are allowed to remain in their original Spec/vP positions throughout the derivation. Based on our earlier observations, we can now see that elements which show variation in their mutual linear ordering are allowed to remain in their original positions of merge throughout the derivation, while elements which do not show such variation require (overt or covert) movement to functional projections. This suggests that the ability of elements to permute is somehow connected to the types of positions that they appear in, and to whether or not they require movement.

In Kayne's theory of LCA, asymmetric c-command is matched to linear precedence: if an element $\alpha$ asymmetrically c-commands $\beta$ in hierarchical structure, then $\alpha$ precedes $\beta$ in linear order. A linear ordering is well-formed iff it fulfills three basic requirements: it must be transitive so that xLy & yLz $\rightarrow$ xLz; total so that all members of a set are linearly ordered (ie for all distinct elements x, y, either xLy or yLx); and antisymmetric so that xLy is incompatible with yLx. However, sentences like [34a-b] and [34c-d] support the need to relax the requirement for totality slightly - rather than assuming that hierarchical structure must always determine a *total* order, it seems that hierarchical structure can sometimes determine a *partial* order. This means that a linear ordering can be well-formed even if it is not total in the sense that for all distinct elements x, y, we must determine whether x precedes y or y precedes x.

But how an we achieve such a situation, without losing the restrictive nature of our theory? Assuming, in line with Kayne (1994) and Chomsky (1995), that asymmetric c-command directly corresponds to linear precedence, I hypothesize that if two distinct elements x and y cannot be "seen" by the asymmetric c-command relation, they cannot be linearly ordered by it either. Let us examine the structure illustrated in Diagram (5.17) - the letters w, x, y, z denote terminals:

Diagram (5.17)



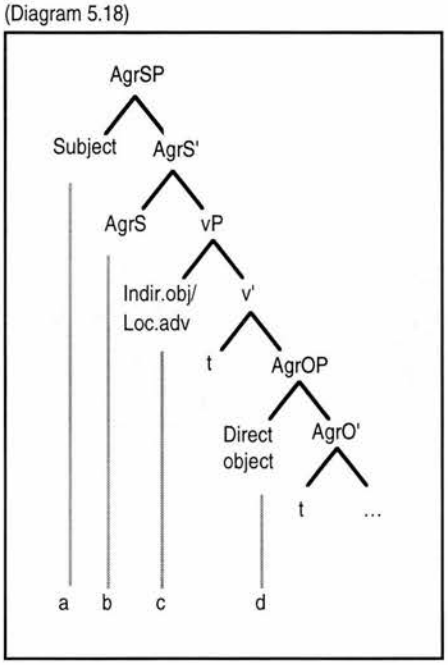

Based on Diagram (5.17) we can see that redefining the notion of asymmetric c-command slightly, so that an element α asymmetrically c-commands β iff α c-commands β and β does not c-command α *and both α and β are not specifiers of light vPs,* will give us the desired results. This modified version of asymmetric c-command is able to ensure that W in Spec/$FP_1$ asymmetrically c-commands X in Spec/$vP_1$, Y in Spec/$vP_2$, and Z in Spec/$FP_2$; secondly, that X in Spec/$vP_1$ asymmetrically c-commands Z in Spec/$FP_2$; thirdly, that Y in Spec/$vP_2$ also asymmetrically c-commands Z in Spec/$FP_2$; and fourthly, that X in Spec/$vP_1$ does *not* asymmetrically c-command Y in Spec/$vP_2$. The set of ordered pairs for which asymmetric c-command holds is thus <W, X>, <W, Y>, <W, Z>, <X, Z>, <Y, Z>, and the d(A) is <w, x>, <w, y>, <w, z>, <x, z>, <y, z>. Because the elements X and Y appear in specifiers of light vPs, X does not asymmetrically c-command Y and the d(A) does not contain the pair <x, y>. However, given the relaxation of the requirement for totality, the d(A) not containing the pair <x, y> does not automatically result in ill-formedness: the structure is perfectly well-formed as long as both x and y appear in specifiers of light vPs, and instead of dealing with a situation in which hierarchical structure determines a *total* order, we are dealing with a situation in which it determines a *partial* order.

However, in order to prevent the system from overgenerating, it must be emphasized right away that the relaxation of the requirement for totality so that a linear ordering is well-formed even if it is not total in the sense that for all distinct elements x,

y, either xLy or yLx, is only meant to apply to situations in which both x and y appear in specifiers of light vPs. In other words, the d(A) not containing the pair <x, y> does not result in ill-formedness iff both x and y appear in specifiers of light vPs. This allows us to still exclude all other constructions violating the requirement for totality. For example, we are able to exclude structures such as $[_{XP}$ X [YP] [ZP]] in which a head has multiple complements on the basis of YP and ZP being in a too symmetric a relation to one another: because neither YP nor ZP asymmetrically c-commands the other, the d(A) lacks the pair involving these two constituents (and whatever they dominate...) and so does not meet the totality requirement.

The particular redefinition of asymmetric c-command proposed above has important consequences: it predicts that if two elements α and β do not enter into an asymmetric c-command relation with regard to each other because they are both specifiers of light vPs, they can be linearized in any order in the PF component of the grammar, to satisfy PF requirements. These requirements could state, for example, that no two elements α and β can be uttered at the same time: thus, a random ordering must be created for α and β in the PF component, for the utterance to make any sense. The PF requirements could also state that intonationally "light" elements must be pronounced before intonationally "heavy" elements - I will return to this briefly in Chapter Six. In order to see more clearly how this modified version of asymmetric c-command works in practice, let us examine the post-movement structure of the sentences in [25c-d] and [33c-d]. These sentences have neutral, syntactically unmarked word order, and the subject has moved to Spec/AgrSP, while the direct object has moved to Spec/AgrOP. The indirect object or locative adverbial, because it has no features which would need further checking in a clausal functional projection, appears in its original Spec/vP position (irrelevant details omitted):

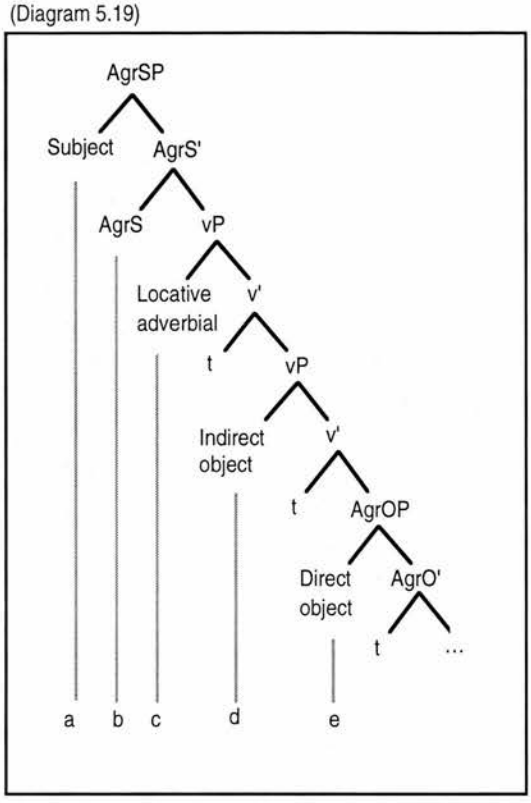
(Diagram 5.18)




Given our modified version of asymmetric c-command, the d(A) in Diagram (5.18) is <a, b>, <a, c>, <a, d>, <b, c>, <b, d>, <c, d>, and the linear order of terminals is a-b-c-d. Because all elements asymmetrically c-command, or are asymmetrically c-commanded by, all the other elements in the structure, the ordering is total and well-formed even in the sense of Kayne (ie even in the sense that for all distinct elements x, y, either x precedes y or y precedes x). And because the ordering is total, there can be no permutation between elements (ie no random ordering can be created for any two elements in the PF component) - this is exactly what we would expect, on the basis of our earlier discussion of the sentences in [25c-d] and [26c-d]. This shows that our modified version of the LCA is able to account for exactly the same data as Kayne's version is, and that we are not compromising the restrictive nature of the theory.

Let us now turn to the structure of sentences like [34a-b] and [34c-d] which, as we have seen, are problematic for Kayne's version of the LCA in that they allow permutation between the locative adverbials and indirect objects, without entailing any focussing effects:

(Diagram 5.19)




Again, given the modified version of asymmetric c-command, the d(A) is <a, b>, <a, c>, <a, d>, <a, e>, <b, c>, <b, d>, <b, e>, <c, e>, <d, e>. Because both the locative adverbial and the indirect object appear in specifiers of light vPs, no asymmetric c-command relation can be established between them - this means that the d(A) does not contain the pair <c, d>. However, because we are dealing with elements in the specifiers of light vPs, the d(A) not containing the pair <c, d>, instead of resulting in ill-formedness, results in a random order being created for the terminals c and d in the PF component of the grammar. However, note that the d(A) still contains both <a, c> and <b, c> by virtue of the subject and the lexical V asymmetrically c-commanding the locative adverbial; <a, d> and <b, d> by virtue of the subject and the lexical V asymmetrically c-commanding the indirect object; <c, e> by virtue of the locative adverbial asymmetrically c-commanding the direct object; and <d, e>, by virtue of the indirect object asymmetrically c-commanding the direct object. This ensures that, even though the locative adverbial and the indirect object are free to occur in any order *with regard to each other* (ie even though a random ordering is created for these two elements in the PF component of the grammar), they are *not* allowed to permute with regard to the other sentence elements. This is exactly what we would expect, based on our earlier discussion of the sentences in [33a-b] and [33c-d].

In the discussion so far, it has been proposed that an asymmetric c-command

relation does not hold between two distinct elements x and y if both x and y appear in specifiers of light vPs. But we have not discussed any reasons for why this should be so: why should elements in the specifiers of light vPs differ from elements in the specifiers of functional projections in this respect, so that no asymmetric c-command relation can be established between them? At first sight, we could assume that only heads of true chains can enter into asymmetric c-command relations - after all, we have just seen that subjects and objects which require movement to functional projections, are able to asymmetrically c-command all structurally lower elements, whereas no asymmetric c-command relation can be established between elements which can remain in their original positions of merge throughout the derivation. But this cannot be the correct analysis: sentence adverbials are merged as specifiers of functional projections. They require no movement, and yet they are always ordered with regard to each other and with regard to the other sentence elements. Alternatively, we could assume that light v heads are somehow defective or "semantically transparent" heads. This would be a reasonable assumption, given that the exact status of light verbs is still relatively unclear: light verbs are often seen as being in between lexical verbs and true functional heads, in the sense that they have properties of both, but are full members of neither. However, this line of reasoning would rather imply that light vPs cannot be hierarchically ordered either.

In the preceding discussion, we have seen that all arguments of V are merged as specifiers of light v projections in a VP-shell, so that they are all realised within a projection of the lexical V. The solution that I propose is based on the *category/segment* distinction discussed in May (1985), Chomsky (1986a), and Kayne (1994), among many others. Crucially, Kayne (1994, 15ff.) argues that asymmetric c-command is always restricted to categories, so that different segments of a single category XP do not enter into asymmetric c-command relations. Taking the segment/category distinction slightly further, I hypothesize that, rather than being completely independent categories altogether, layered V projections behave more like segments of a single, multiply-layered category VP with regard to syntactic relations such as asymmetric c-command. Crucially, if two distinct elements $\alpha$ and $\beta$ appear in specifier positions of different *segments* of one and the same category VP, they cannot enter into asymmetric c-command relations with regard to each other. Thus, in Diagram (5.19), because the locative adverbial and the indirect object appear in specifiers of different segments of a single multiply-layered category VP, they cannot enter into asymmetric c-command relations with regard to each other. And because they cannot enter into asymmetric c-command relations with regard to each other, they cannot be linearly ordered. Note that, under this line of reasoning, the subject and the direct object

being linearly ordered with regard to the locative adverbial and the indirect object (so that the subject precedes, and the direct object follows them) is due to the fact that both the subject and the direct object appear in specifier positions of categories which are distinct from the multiply-layered category VP containing the locative adverbial and the indirect object.

Again, in order to prevent the system from overgenerating, it must be emphasized that we are only dealing with elements which appear in specifiers of different segments of one and the same category XP. We are not dealing with *all* elements appearing in one and the same category XP. Thus, in constructions such as $[_{XP}\ \alpha\ [_{X'}\ \beta\ \ldots\ ]$ where $\alpha$ is the specifier and $\beta$ is the head of one and the same category XP (structures such as $[_{AgrSP}$ Subject $[_{AgrS'}$ Verb ... ] being a case in point), we are able to ensure that $\alpha$ asymmetrically c-commands, and therefore also precedes, $\beta$. Secondly, in Kayne's system, the *category/segment* distinction is meant to ensure that structures such as $[_{XP}\ \alpha\ [_{X'}\ \beta\ [_{X'}\ \chi\ \ldots\ ]$ where both $\alpha$, $\beta$ are specifiers and $\chi$ is a head are excluded: this is because $\alpha$ and $\beta$ asymmetrically c-command one another, with a consequent violation of antisymmetry. In our system, because both $\alpha$ and $\beta$ are specifiers of segments of one and the same category XP, they cannot be "seen" by the asymmetric c-command relation. Thus, because no asymmetric c-command relation is established between $\alpha$ and $\beta$, no violation of antisymmetry occurs - this would wrongly predict that multiple specifiers are permitted. However, even in our system structures such as $[_{XP}\ \alpha\ [_{X'}\ \beta\ [_{X'}\ \chi\ \ldots\ ]$ can be excluded: I propose that, rather than by the LCA, multiple specifiers are exluded by semantic feature checking operation. In Section 5.1., we have seen that adverbials and arguments of V are merged as specifiers of functional and of light v heads. In both cases, there is semantic feature checking between the adverbials/arguments and the functional or light v head. Because functional and light v heads can have only one feature of the same type, only one of the specifiers $\alpha$, $\beta$ can be fully licensed, by virtue of being merged under semantic feature checking.

The idea that elements appearing in the multiple layers of a single category XP cannot enter into asymmetric c-command relations with regard to each other also explains the observation that only elements which are merged as specifiers of functional projections (eg sentence adverbials) or elements which undergo movement to such positions (eg subjects, direct objects) are ordered with regard to all other elements in the sentence: most functional projections are completely independent categories which do not have a complex, multiply-layered structure. But there seem to be some exceptions: [35] and [36] show that elements appearing in the specifiers of recursive Topic phrases are able to permute, without any drastic change in interpretation or the focus structure of the sentence - the Hungarian data in [35] is from Kiss (1987, 76);

the Italian data in [36] is from Rizzi (1995):

(35) a. *János tegnap Máriát ´mobiza vitte.* *Hungarian*
'As for John, as for Mary, yesterday he took her to the cinema'

b. *Tegnap János Máriát ´mobiza vitte.*
c. *Máriát János tegnap ´mobiza vitte.*
d. *Máriát tegnap János ´mobiza vitte.*

(36) a. *Credo che domani, a Gianni, QUESTO gli dovremmo dire.* *Italian*
'I believe that tomorrow, to Gianni, THIS we should say'

b. *Credo che a Gianni, domani, QUESTO gli dovremmo dire.*
'I believe that to Gianni, tomorrow, THIS we should say'

According to Rizzi, the CP-domain of each sentence can contain as many Topic projections as there are topicalisable elements. The topicalised elements are allowed to permute with regard to each other, but not with regard to the other elements in the sentence. For example, [37] from Rizzi (1995) show that topicalised elements in Italian must always precede [+Wh] question operators (in direct main questions), but follow [+Wh] relative operators:

(37) a. **A chi, il premio Nobel, lo daranno?* *Italian*
'To whom, the Nobel prize, will they give it'

b. *Il premio Nobel, a chi lo daranno?*
'The Nobel prize, to whom will they give it?

c. *Un uomo a cui, il premio Nobel, lo daranno senz'altro.*
'A man to whom, the Nobel Prize, they will give undoubtedly'

d. **Un uomo, il premio Nobel, a cui lo daranno senz'altro.*
'A man, the Nobel Prize, to whom they will give undoubtedly'

In the preceding discussion, we have looked at asymmetric c-command relations between elements appearing in the specifiers of recursive functional and light v projections. On the basis of the preceding data and considerations, I conclude that the lack of asymmetric c-command and linear ordering is due to recursive functional and light v projections behaving more like segments of one and the same category XP. In other words, an asymmetric c-command relation and linear ordering cannot be established between elements, both of which appear in specifiers of segments of one and the same category XP. However, an asymmetric c-command relation and linear ordering *can* be established between elements which appear in (specifiers of)

completely different categories XP and YP. This explains why an element in a specifier of a recursive light v projection, or a recursive Topic projection, cannot enter into an asymmetric c-command relation with another element in another Spec/vP or Spec/TopicP, but why such elements can still asymmetrically c-command, and be asymmetrically c-commanded by, elements appearing in other, completely different categories such as AgrSP and AgrOP. Because asymmmetric c-command directly corresponds to linear precedence, this allows us to explain why in sentences such as [34a-b] and [34c-d], the subject is always linearly ordered with regard to the locative adverbial, the indirect object, and the direct object, and why the locative adverbial and the indirect object are linearly ordered with regard to the direct object, but why they are not linearly ordered with regard to each other.

### 5.3.3. Further Considerations

In the previous sub-section, I discussed the relation between hierarchical structure and linear order and proposed that elements appearing in different "segments" of a single category XP cannot be seen and linearly ordered by the asymmetric c-command relation. In this sub-section, I look at some data which seems to be problematic for this analysis.

In [38a-d], the indirect object and the manner adverbial, because they both have the form of KPs, appear in specifiers of light vPs. Under the line of reasoning pursued in the previous sub-section, we would expect them to be able to permute, without any drastic change in interpretation. But this is not what happens: [38a-b] have neutral, syntactically unmarked word order, while [38c-d] involve slight focussing. This suggest that [38c-d] have been derived from [38a-b] by means of movement (to FocusP):

(38) a. *Pulmu laulo-i poja-lle kaunii-sti.*
Pulmu-Nom sing-past-3sg boy-Allat beautiful-Adv
'Pulmu sang to a/the boy beautifully'

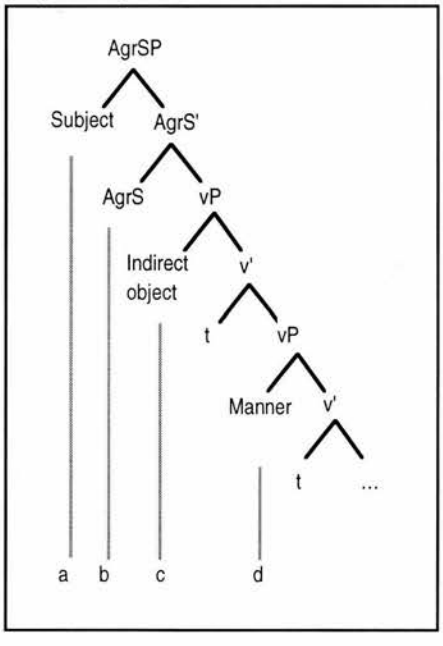
b. *Pulmu huus-i poja-lle kova-a.*
Pulmu-Nom shout-past-3sg boy-Allat hard-Part
'Pulmu shouted to a/the boy loudly'

c. *Pulmu laulo-i kaunii-sti poja-lle.*
Pulmu-Nom sing-past-3sgbeautiful-Adv boy-Allat
'Pulmu sang beautifully to a/the boy'
('It was to a/the boy that Sirkku sang beautifully')

d. *Pulmu huus-i kova-a poja-lle.*
Pulmu-Nom shout-past-3sg hard-Part boy-Allat
'Pulmu shouted loudly to a/the boy'
('It was to a/the boy that Sirkku shouted loudly')

Given the modified version of the LCA proposed in the previous sub-section, we would expect to be dealing with the structure illustrated in Diagram (5.20), so that the d(A) is <a,b>, <a,c>, <a,d>, <b,c>, <b,d>, by virtue of the subject asymmetrically c-commanding the lexical V, the indirect object and the manner adverbial, and the lexical V asymmetrically c-commanding the indirect object and the manner adverbial. Because both the indirect object and the manner adverbial appear in light v projections (ie because they appear in different "segments" of one and the same category VP), no asymmetric c-command relation can be established between them, and no ordering can be specified for the terminals c and d by the LCA:

(Diagram 5.20)




So, why are two distinct items x and y allowed to permute in sentences like [34a-b] and [34c-d], but not in sentences like [38a-b] and [38c-d], when both x and y appear in specifiers of light vPs? In order to explain what is going on, let us return to the proposal that functional projections like AgrP and AspectP can be interspersed with light vPs - cf. Travis (1991), Collins & Thràinsson (1993; 1996), and Koizumi (1995). An examination of Finnish sentences shows that indirect objects and manner adverbials are merged as specifiers of light vPs which are separated by (at least) a functional AgrOP and a functional AspectP. All the sentences in [39] and [40] have neutral, syntactically unmarked word order; the elements appearing in the specifiers of AgrO

functional projections are underlined:

(39) a. *Pulmu laulo-i Sirku-lle aaria-n.*
Pulmu-Nom sing-past-3sg aria-sg-Acc
'Pulmu sang Sirkku an aria'

b. *Pulmu laulo-i aaria-n kaunii-sti.*
Pulmu-Nom sing-past-3sg aria-Acc beautiful-Adv
'Pulmu sang an aria beautifully'

c. *Pulmu laulo-i Sirku-lle aaria-n kaunii-sti.*
Pulmu-Nom sing-past-3sg aria-sg-Acc beautiful-Adv
'Pulmu sang Sirkku an aria beautifully'

(40) a. *Pulmu huus-i Sirku-lle varoitukse-n.*
Pulmu-Nom shout-past-3sg Sirkku-Allat warning-Acc
'Pulmu shouted Sirkku a warning'

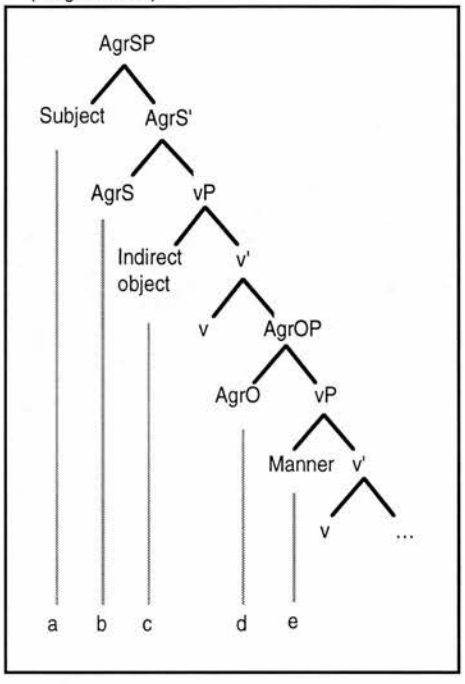
b. *Pulmu huus-i varoitukse-n kova-a.*
Pulmu-Nom shout-past-3g warning-Acc hard-Part
Pulmu shouted a warning loudly'

c. *Pulmu huus-i Sirku-lle varoitukse-n kova-a.*
Pulmu-Nom shout-past-3sg Sirkku-Allat warning-Acc loud-Part
'Pulmu shouted Sirkku a warning loudly'

In Chapter Two, I suggested that functional AgrO and Aspect projections, because they check transitivity-related and aspectual features, are present in all Finnish sentences all the time: this means that even sentences like [38] have an AgrO and an aspectual functional projection. These projections could be interpreted as forming a kind of "watershed" between the "Benefactive-related" and "Manner-related" light vPs - in other words, because the indirect objects and manner adverbials in [38] are separated by a functional AgrOP and AspectP, they are *not* permitted to permute (ie somehow the presence of these functional projections "closes off" a particular projection of V, so that the two light vP are no longer interpreted as different "segments" of a single category XP, but rather as "segments" of two distinct categories XP and YP - a similar idea of V projections being separated by functional projections is presented by Koizumi). But because the locative adverbials and the indirect objects in [34] are *not* separated by functional projections, they *are* allowed to permute with regard to each other (ie these items still appear in different "segments" of a single category XP). Under this line of reasoning, the sentences in [38] have the (simplified) structure illustrated in Diagram (5.21), rather than the one illustrated in

Diagram (5.20):[16]

(Diagram 5.21)




In Diagram (5.21), we can see that the d(A) is <a,b>, <a,c>, <a,d>, <a,e>, <b,c>, <b,d>, <b,e>, <c,d>, <d, e>; thus, the linear ordering of terminals is a-b-c-d-e. Although the d(A) does not contain <c,e> so that no relation is specified for the terminals c and e, the fact that c follows e (ie the fact that the manner adverbial follows the indirect object) can be inferred from that fact that d follows c and e follows d.

## 5.4. Conclusion

In this chapter, I proposed a theory of layered VPs: arguments of the lexical V are merged into the specifier positions of light vPs, under semantic feature checking between the arguments and the complex light v heads. After having discussed briefly

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[16] The idea that functional AgrO heads are visible to the LCA so that they are part of the linear ordering is essentially in keeping with the version of the LCA proposed in Kayne (1994). However, it is *not* in keeping with the version of it proposed in Chomsky (1995, 334ff.). This is because in Chomsky, linear ordering is always seen as part of the phonological component so that the LCA only applies after Morphology. Hence, by the time the LCA applies, the head of AgrO in Diagram (5.21) would only contain a trace. But according to Chomsky (1995, 337) traces can never be part of the linear ordering because they are not present at PF.

the ability of different types of arguments to raise to Spec/AgrSP, I moved on to examine the relation between hierarchical structure and linear order. I hypothesized that, although light vPs are always hierarchically ordered according to a strict universal hierarchy, UG allows languages to vary as to the way in which this hierarchical structure corresponds to linear word order. In particular, UG allows elements appearing in different "segments" of a single category XP to permute.

# Chapter Six

# The Position of Finnish Manner Adverbials

In this chapter, I determine the original position of Finnish manner adverbials. I discuss the status of manner adverbials as arguments of V, and propose that they are merged as unique specifiers of v; I then determine the actual location of the Manner-related vP. In Section 6.3. I discuss the relation between manner, place and time adverbials. In Section 6.4. I give motivation for an analysis of manner adverbials as specifiers of v, rather than complements of V. In Section 6.5. I examine the distribution of manner adverbials in Finnish participial constructions briefly.

## 6.1. Arguments and Optional Arguments

### 6.1.1. Obligatory and Optional Manner Adverbials

Manner adverbials can be obligatory and optional arguments of the lexical V; cf. McConnell-Ginet (1982), Larson (1988; 1990), Vilkuna (1996, 164ff.), and Alexiadou (1997, 6f.). As shown by [1] and [2], when manner adverbials are obligatory arguments of V, they cannot be removed from the sentence without causing ungrammaticality or a change in interpretation:

(1) a. *Sirkku käyttäyty-i kunno-lla.*
Sirkku-Nom behave-past-3sg proper-Adess
'Sirkku behaved well'

b. **Sirkku käyttäyty-i.*
Sirkku-Nom behave-past-3sg

c. *Sirkku asu-u ylellise-sti.*
Sirkku-Nom live-pres-3sg luxurious-Adv
'Sirkku lives in luxury'

d. **Sirkku asu-u.*
Sirkku-Nom live-pres-3sg

(2) a. *Sirkku kohtele-e Pulmu-a huono-sti.*
Sirkku-Nom treat-pres-3sg Pulmu-Part bad-Adv
'Sirkku treats Pulmu badly'

b. **Sirkku kohtele-e Pulmu-a.*
Sirkku-Nom treat-pres-3sg Pulmu-Part

c. *Sirkku suhtautu-u asia-an kunnioitukse-lla.*
Sirkku-Nom take-pres-3sg matter-sg-Illat respect-Adess
'Sirkku regards/treats the matter with respect'

d. **Sirkku suhtautu-u asia-an.*
Sirkku-Nom take-pres-3sg matter-sg-Illat

[3] and [4] show that manner adverbials functioning as optional arguments of V *can* be removed from the sentence without causing ungrammaticality or a change in interpretation. In Chapter One, we have seen that such adverbials are called *adjuncts:*

(3) a. *Sirkku kävele-e ontuma-lla.*
Sirkku-Nom walk-pres-3sg limp-Adess
'Sirkku walks with a limp'

b. *Sirkku kävele-e.*
Sirkku-Nom walks-pres-3sg
'Sirkku walks'

c. *Sirkku laula-a kaunii-sti.*
Sirkku-Nom sing-pres-3sg beautiful-Adv
'Sirkku sings beautifully'

d. *Sirkku laula-a.*
Sirkku-Nom sing-pres-3sg
'Sirkku sings'

(4) a. *Sirkku juokse-e satase-n ontuma-lla.*
Sirkku-Nom run-pres-3sg 100 meters-Acc limp-Adess
'Sirkku runs the 100 meters competition with a limp'

b. *Sirkku juokse-e satase-n.*
Sirkku-Nom run-pres-3sg 100 meters-Acc
'Sirkku runs the 100 meters competition '

c. *Sirkku laula-a aaria-n tuntee-lla.*
Sirkku-Nom sing-pres-3sg aria-sg-Acc feeling-Adess
'Sirkku sings an/the aria with feeling'

d. *Sirkku laula-a aaria-n.*
Sirkku-Nom sing-pres-3sg aria-sg-Acc
'Sirkku sings an/the aria'

So, based on [1] through [4], we can see that Finnish manner adverbials can be obligatory and optional arguments of V; some verbs select them obligatorily, others optionally. Finnish direct objects and indirect objects can also be obligatory and optional arguments of V; as shown by [5] and [6], a transitive V such as *hajottaa* 'break' selects a direct object obligatorily while an unergative V such as *laulaa* 'sing' selects it optionally; in the same way, a (di)transitive V such as *antaa* 'give' selects an *indirect* object obligatorily while a transitive V such as *kertoa* 'tell' selects it optionally. Note that direct and indirect objects which are optional arguments of V, in the sense that they can be removed from the sentence without causing ungrammaticality or a change in interpretation, are *not* classified as adjuncts.

(5) a. *Pulmu hajott-i surffilauda-n.*
Pulmu-Nom break-past-3sg surf board-sg-acc
'Pulmu broke the surf board'

b. **Pulmu hajott-i.*
Pulmu-Nom break-past-3sg

c. *Pulmu laulo-i aaria-n.*
Pulmu-Nom sing-past-3sg aria-sg-acc
'Pulmu sang an aria'

d. *Pulmu laulo-i.*
Pulmu-Nom sing-past-3sg
'Pulmu sang'

(6) a. *Pulmu anto-i Sirku-lle surffilauda-n.*
Pulmu-Nom give-past-3sg Sirkku-allat surf-board-sg-Acc
'Pulmu gave Sirkku a surf board'

b. **Pulmu anto-i surffilauda-n.*
Pulmu-Nom give-past-3sg surf-board-sg-Acc
'Pulmu gave a surf board'

c. *Pulmu kerto-i Sirku-lle emävalhe-en.*
Pulmu-Nom tell-past-3sg Sirkku-allat huge lie-sg-Acc
'Pulmu told Sirkku a huge lie'

d. *Pulmu kerto-i emävalhe-en.*
Pulmu-Nom tell-past-3sg huge lie-sg-Acc
'Pulmu told a huge lie'

It has been proposed (eg by Chomsky 1965) that there is no distinction between manner adverbials which are obligatory arguments of V, and manner adverbials which

are adjuncts. Instead, all manner adverbials are arguments of V, just as all direct objects are classified as arguments of V. In the next sub-section, I examine in more detail if there is no basis for syntactic distinction between Finnish obligatory and optional manner adverbials.

### 6.1.2. A Minimalist View on Arguments and Optional Arguments

In this sub-section, I hypothesize that the syntactic component of the computational system of language is not able to distinguish between lexical items which are obligatory arguments of V and lexical items which are optional arguments of V. Rather, both types of arguments are treated in the same way by the computational system of language: they are selected and inserted into the appropriate Spec/vP position in the same way, under semantic feature checking between the argument and the complex v head.

As we have seen in Chapter Two, the numeration is a multiset of pairs (LI, i) so that LI is the lexical item and i its index specifying how many times LI must be used in the derivation. The derivation converges only after all lexical items have been used from the numeration, and all indices have been reduced to zero. However, the syntactic component of the computational system of language, when it selects items from the numeration and performs permissible computations on them, is not able to see any difference between items which are obligatory arguments of V, and items which are optional arguments of V. To clarify what is being proposed, let us assume that we are dealing with two different lexical verbs, *treat* and *shoot*, which are specified [Agent [Theme [Manner]]] when they emerge from the numeration. As shown in [7a-b] and [8a-b], *treat* selects a manner adverbial obligatorily while *shoot* selects it optionally:

(7) a. *Sirkku treated Pulmu badly.*
b. **Sirkku treated Pulmu.*

(8) a. *Sirkku shot Pulmu skilfully.*
b. *Sirkku shot Pulmu.*

Let us also assume that the derivation has reached the stage illustrated in Diagrams (6.1) and (6.2) below, so that the computational system is looking for an item which it can insert as a specifier of vP, under semantic feature checking. In other words, the lexical V has raised and adjoined to the Manner-related v, to have its semantic feature [Manner] checked against the corresponding feature on the v, and the computational system is looking for an item $\alpha$ which it can merge as specifier of the v projection. It would be against the restrictive nature of our system to suggest that in (6.1), the

derivation is formed in a different way than in (6.2), by the computational system of language. Rather, all that the computational system cares about is that movement is driven by a need to check morphological features, and merge is a binary operation, combining two syntactic items with matching features:

Diagram (6.1)

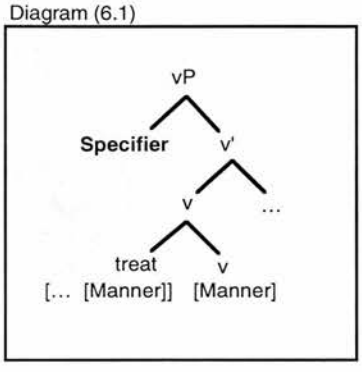
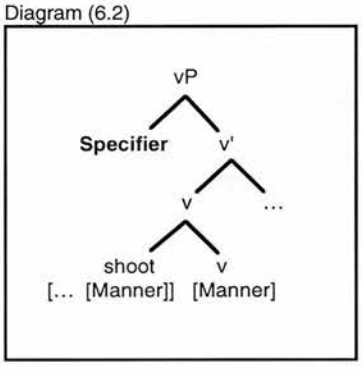



Diagram (6.2)




However, if the computational system of language is unable to distinguish between obligatory and optional arguments of V, how can we explain the fact that [7b] is ungrammatical but [8b] is fine? As we have seen in Chapter Five, the number and types of light vPs, and hence also the number and types of arguments of lexical V which can enter the derivation, are determined by the number and types of semantic features that the V is associated with, when it emerges from the numeration. For example, if the V is associated with two semantic features, the derivation must contain a lexical VP and two light vPs: the arguments of V are merged as specifiers of these light vPs, under semantic feature checking. I hypothesize that some semantic features of V are *intrinsic* in the sense that they are listed separately in the lexical entry for the V or are determined by properties so listed, whereas others are *optional* in that they are determined when V enters the numeration, for each occurrence of V. Given the discussion in Chomsky (1995, 225ff.; 235ff.; 277f.) and in Chapters Two and Four of this thesis, it is reasonable to suppose that a transitive verb's having a semantic feature like [Theme] is determined by, and follows from, its having a feature like [+Transitive]. But in unergative verbs, the presence of the semantic feature [Theme] does not really follow from anything; rather, it must be determined when the V enters the numeration, for each occurrence of the V. Under this line of reasoning, a lexical V such as *treat* can be associated with a feature [Manner] which is intrinsic in that it is either listed separately in the lexical entry for *treat,* or is determined by properties so listed - [7b] is ungrammatical because the Manner-related Spec/vP position is unfilled. But a lexical V such as *shoot* can be associated with a feature [Manner] which is *optional*, in the sense that it is determined when *shoot* enters the numeration, for each occurrence of *shoot*. In [8a], *shoot* is specified [Agent [Theme [Manner]]] when it emerges from the

numeration - the sentence is grammatical because the Manner-related Spec/vP is filled by an appropriate argument so that feature checking can take place between the argument and the complex v head. In [8b], however, *shoot* is specified only [Agent [Theme]] when it emerges from the numeration; thus, in [8b], there is no Manner-related vP present in the derivation.

Given the proposal that obligatory and optional manner adverbials are treated in the same way by the computational system of language, we would expect to find certain similarities between them. I discuss these similarities in more detail in the next three sub-sections.

### 6.1.3. A Unique Position of Merge

In the previous sub-section, I proposed that lexical verbs which have the same semantic feature specification when they emerge from the numeration give rise to a similar VP-structure. This means that the Manner-related vP must always be created in the same way, by the computational system of language, irrespective of the fact that in some verbs, the feature [Manner] is intrinsic whereas in others, it is optional. Because a lexical V can be associated with only one semantic feature of the same type, the derivation can usually contain only one Manner-related light vP. In other words, because obligatory and optional manner adverbials are merged into a *unique* Manner-related Spec/vP position, they cannot co-occur in the same sentence:

(9) a. **Sirkku käyttäyty-i kunno-lla ystävällise-sti.*
Sirkku-Nom behave-past-3sg proper-Adess friendly-Adv

b. **Sirkku asu-u ylellise-sti holtittoma-sti.*
Sirkku-Nom live-pres-3sg luxurious-Adv careless-Adv

c. **Sirku-lle käv-i köpelö-sti huono-mmin kuin Pulmu-lle.*
Sirkku-Allat fare-past-3sg bad-Adv worse-Adv than Pulmu

(10) a. **Sirkku kohtele-e Pulmu-a huono-sti julma-lla tava-lla.*
Sirkku-Nom treat-pres-3sg Pulmu-Part bad-Adv cruel-sg-Adess way-sg-Adess

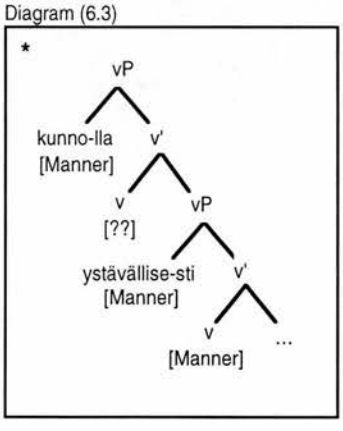
b. **Sirkku valitse-e sana-nsa huole-lla hitaa-sti.*
Sirkku-Nom choose-pres-3sg word-sg-Acc-Px careful-Adess slow-Adv

c. **Sirkku suhtautu-u asia-an kunnioitukse-lla huolettoma-sti.*
Sirkku-Nom take-pres-3sg matter-sg-Illat respect-Adess careless-Adv

The ungrammaticality of [9a-c] and [10a-c] can be explained by the fact that

only one of the manner adverbials can be merged as a specifier of a Manner-related vP so that it is able to check its semantic feature and value [Manner], at the point of merge, against the corresponding feature and value of a complex light v head. Because the second manner adverbial is merged as a specifier of a complex light v head which is *not* associated with the correct semantic feature specification, the derivation continues to contain unchecked features and crashes at the interface levels. This situation is illustrated (in a simplified way) in Diagram (6.3):[1]

Diagram (6.3)




## 6.1.4. Distribution

Another argument for the idea that obligatory and optional manner adverbials are treated in the same way by the computational system of language, and they are merged as unique specifiers of light v projections, can be formulated in relation to movement. As we have seen in Chapters One and Three, the different word orders in sentences like [11] through [13] are a result of the manner adverbials moving to derived A'-positions such as Spec/FocP, and also of the other arguments moving around the manner adverbials. If obligatory and optional manner adverbials were treated in a *different* way by the computational system of language, and if they were merged into *different*

---

[1] Note that sentences can sometimes contain two manner adverbials which are co-ordinated so that they form a complex phrase of the type [$_{KP}$ KP and KP]:

(i) *Sirkku käyttäyty-i kunno-lla ja ystävällise-sti.*
Sirkku-Nom behave-past-3sg proper-Adess and friend-Adv
'Sirkku behaved properly and in a friendly way'

(ii) *Sirkku asu-u ylellise-sti ja holtittoma-sti.*
Sirkku-Nom live-pres-3sg luxurious-Adv and careless-Adv
'Sirkku lives luxuriously and carelessly'

In these sentences the complex V+v head selects the higher KP dominating the two KP manner adverbials: in other words, it "sees" only one manner adverbial.

structural positions, we would expect to see at least some variance between them in constructions involving complex movement operations:

(11) a. *Sirkku käyttäytyi huonosti/ kunnolla.*
'Sirkku behaved badly/ well'

b. *Sirkku huonosti/ kunnolla käyttäytyi.*
'Sirkku badly/ well behaved'

c. *Käyttäytyi Sirkku huonosti/ kunnolla.*
'Behaved Sirkku badly/ well'

d. *?Käyttäytyi huonosti/ kunnolla Sirkku.*
'Behaved badly/ well Sirkku'

e. *Huonosti/ kunnolla Sirkku käyttäytyi.*
'Badly/ well Sirkku behaved'

f. *Huonosti/ kunnolla käyttäytyi Sirkku.*
'Badly/ well behaved Sirkku'

(12) a. *Sirkku kävelee nopeasti/ ontumalla.*
'Sirkku walks fast/ with a limp'

b. *Sirkku nopeasti/ ontumalla kävelee.*
'Sirkku fast/ with a limp walks'

c. *Kävelee Sirkku nopeasti/ ontumalla.*
'Walks Sirkku fast/ with a limp'

d. *?Kävelee nopeasti/ ontumalla Sirkku.*
'Walks fast/ with a limp Sirkku'

e. *Nopeasti/ ontumalla Sirkku kävelee.*
'Fast/ with a limp Sirkku walks'

f. *Nopeasti/ ontumalla kävelee Sirkku.*
'Fast/ with a limp walks Sirkku'

(13) a. *Sirkku saapui nopeasti/ vauhdilla.*
'Sirkku arrived fast/ with speed'

b. *Sirkku nopeasti/ vauhdilla saapui.*
'Sirkku fast/ with speed arrived'

c. *Saapui Sirkku nopeasti/ vauhdilla.*
'Arrived Sirkku fast/ with speed'

d. *?Saapui nopeasti/ vauhdilla Sirkku.*
'Arrived fast/ with speed Sirkku'

e. *Nopeasti/ vauhdilla Sirkku saapui.*
'Fast/ with speed Sirkku arrived'

f. *Nopeasti/ vauhdilla saapui Sirkku.*
'Fast/ with speed arrived Sirkku'

The examples in [14] show that obligatory and optional manner adverbials can also undergo long Wh-movement to Spec/CP in exactly the same way:

(14) a. *[$_{CP}$ Miten$_i$ sanoit [$_{CP}$ $t_i$ että Sirkku luulee [$_{CP}$ $t_i$ että Pulmu käyttäytyy $t_i$ ]]]*
'How did you say that Sirkku thinks that Pulmu behaves'

b. *[$_{CP}$ Miten$_i$ sanoit [$_{CP}$ $t_i$ että Sirkku luulee [$_{CP}$ $t_i$ että Pulmu kohtelee kissaansa $t_i$ ]]]*
'How did you say that Sirkku thinks that Pulmu treats her cat'

c. *[$_{CP}$ Miten$_i$ sanoit [$_{CP}$ $t_i$ että Sirkku luulee [$_{CP}$ $t_i$ että Pulmu kävelee $t_i$ ]]]*
'How did you say that Sirkku thinks that Pulmu walks'

d. *[$_{CP}$ Miten$_i$ sanoit [$_{CP}$ $t_i$ että Sirkku luulee [$_{CP}$ $t_i$ että Pulmu pesee kissansa $t_i$ ]]*
'How did you say that Sirkku thinks that Pulmu washes her cat'

Again, if obligatory and optional manner adverbials were treated in different ways by the computational system of language, and if they were merged into different structural positions, we would expect to see at least some differences between them in constructions involving cyclic movement operations.

## 6.1.5. Extraction from Islands

We can also test the proposal that all obligatory and optional manner adverbials are treated in a uniform way by the computational system of language by means of NP- and Wh-island constructions. It has been proposed that in NP-island constructions, extraction is allowed from obligatory, but not from optional, arguments of V - [15a-c] show that extraction is possible from a direct object which is an obligatory argument of the lexical V *ostaa* 'buy':[2]

[2] The discussion on NP- and Wh-islands goes back to Ross (1967). For more discussion on islands, see Aoun & Li (1991), Lasnik & Saito (1992) and Goodluck & Rochemont (1992), among many others.

(15) a. *Pulmu väitt-i että Sirkku ost-i [iso-n pullo-n punaviini-ä].*
Pulmu-Nom claim-past-3sg that Sirkku-Nom buy-past-3sg big-Acc bottle-Acc red wine-Part
'Pulmu claimed that Sirkku bought a big bottle of red wine'

b. *Mitä$_i$ Pulmu väitt-i että Sirkku ost-i [iso-n pullo-n* ***t$_i$*** *]?*
What-Part Pulmu-Nom claim-past-3sg that Sirkku-Nom buy-past-3sg big-Acc bottle-Acc
'What$_i$ did Pulmu claim that Sirkku bought a big bottle of t$_i$'

c. *Punaviini-ä$_i$ Pulmu väitt-i että Sirkku ost-i [iso-n pullo-n* ***t$_i$*** *].*
Red wine-Part Pulmu-Nom claim-past-3sg that Sirkku-Nom buy-past-3sg big-Gen bottle-Gen
'Red wine Pulmu claimed that Sirkku bought a big bottle of'

[16a-c] show, however, that extraction is also possible from a direct object which is an *optional* argument of V - within the system developed here, we are dealing with a situation in which the feature [Theme] of V, rather than being an intrinsic feature, is an optional feature. On the assumption that the derivation is formed in the same way in both [15] and [16], there is no reason to expect NP-island phenomena to be sensitive to the obligatory vs optional argument distinction:[3]

(16) a. *Pulmu väitt-i että Sirkku laulo-i [aaria-n ooppera-sta "Taikahuilu"].*
Pulmu-Nom claim-past-3sg that Sirkku-Nom sing-past-3sg aria-Acc opera-Elat "The Magic Flute"
'Pulmu claimed that Sirkku sang an aria from the opera "The Magic Flute"

b. *Minkä$_i$ Pulmu väitt-i että Sirkku laulo-i [****t$_i$*** *ooppera-sta "Taikahuilu"]?*
What-Acc Pulmu-Nom claim-past-3sg that Sirkku-Nom sing-past-3sg opera-Elat "The Magic Flute"
'What did Pulmu claim that Sirkku sang from the opera "The Magic Flute"'

c. *Aaria-n$_i$ Pulmu väitt-i että Sirkku laulo-i [****t$_i$*** *ooppera-sta "Taikahuilu"].*
Aria-Acc Pulmu-Nom claim-past-3sg that Sirkku-Nom sing-past-3sg opera-Elat "The Magic Flute"
'An aria Pulmu claimed that Sirkku sang from the opera "The Magic Flute"'

[17] and [18] show, in turn, that extraction is *not* possible from a manner adverbial which is an obligatory argument of the lexical V, or from a manner adverbial

[3] Ie we would not expect to see any differences between obligatory and optional arguments of V because, within the system developed here, all arguments are, in fact, obligatory.

which is an optional argument of the lexical V. Again, on the assumption that the derivation is formed in the same way by the computation system of language, irrespective of the fact that in [17], [Manner] is an intrinsic feature while in [18], it is optional, we would not even expect to see any difference between [17] and [18]: [4]

(17) a. *Pulmu väitt-i että Sirkku suhtautu-i asia-an [filosofi-n tyyneyde-llä].*
Pulmu-Nom claim-past-3sg that Sirkku-Nom take-past-3sg matter-sg-Illat philosopher-sg-Gen calmness-Adess
'Pulmu claimed that Sirkku took the matter with philosopher's calmness'

c. **Minkä$_i$ Pulmu väitt-i että Sirkku suhtautu-i asia-an [**t$_i$** tyyneyde-llä]?*
What-Gen Pulmu-Nom claim-past-3sg that Sirkku-Nom take-past-3sg matter-sg-Illat t calmness-Adess
'What$_i$ did Pulmu claim that Sirkku took the matter with t$_i$ calmness'

c. **Filosofi-n$_i$ Pulmu väitt-i että Sirkku suhtautu-i asia-an [**t$_i$** tyyneyde-llä].*
Philosopher-Gen Pulmu-Nom claim-past-3sg that Sirkku-Nom take-past-3sg matter-sg-Illat calmness-Adess
'Philosopher's Pulmu claimed that Sirkku took the matter with calmness'

(18) a. *Pulmu väitt-i että Sirkku laula-a aario-i-ta [suure-n taiteilija-n varmuude-lla].*
Pulmu-Nom claim-past-3sg that Sirkku-Nom sing-pres-3sg aria-pl-Part great-Gen artist-Gen certainty-Adess
'Pulmu claimed that Sirkku sings arias with the certainty of a great artist'

b. **Minkä$_i$ Pulmu väitt-i että Sirkku laula-a aario-i-ta [**t$_i$** varmuude-lla]?*
What-Gen Pulmu-Nom claim-past-3sg that Sirkku-Nom sing-pres-3sg aria-pl-Part certainty-Adess
'What did Pulmu claim that Sirkku sings arias with the certainty of'

c. **Suure-n taiteilija-n$_i$ Pulmu väitt-i että Sirkku laula-a aario-i-ta [**t$_i$** varmuude-lla]*
Great-Gen artist-Gen Pulmu-Nom claim-past-3sg that Sirkku-Nom sing-pres-3sg aria-pl-Part certainty-Adess
'A great artist Pulmu claimed that Sirkku sings arias with the certainty of'

The data in [15] through [18] strongly suggest that NP-island phenomena are not sensitive to the obligatory vs optional argument distinction. In the case of direct objects, extraction is possible from both obligatory and optional arguments of V, whereas in the case of manner adverbials, extraction is possible neither from the obligatory nor the

[4] For examples such as [17a-c] and [18a-c], see also Vilkuna (1996, 318f.).

optional arguments of V. Rather than the obligatory vs optional argument distinction, this could suggest that NP-island phenomena are sensitive to a distinction between arguments which are Themes and arguments which express Manner meaning. However, examples like [19] through [22] show that extraction is not possible from place and time adverbials either: this could suggest, in turn, that NP-island phenomena are sensitive to a distinction between arguments which are Themes, and arguments which express some kind of circumstantial adverbial meanings (ie arguments which denote manner, place or time):

(19) a. *Pulmu väitti että Sirkku pani kirjan [isänsä pöydälle].*
'Pulmu claimed that Sirkku put the book on her father's desk'

c. **Kenen$_i$ Pulmu väitti että Sirkku pani kirjan [**t$_i$** pöydälle]?*
'Whose did Pulmu claim that Sirkku put the book on the table'

c. **Isänsä Pulmu väitti että Sirkku pani kirjan [**t$_i$** pöydälle].*
'Her fathers Pulmu claimed that Sirkku put the book on the table'

(20) a. *Pulmu väitti että Sirkku laulaa aarioita [Milanon oopperatalossa].*
'Pulmu claimed that Sirkku sings arias in Milan's operahouse'

b. **Minkä Pulmu väitti että Sirkku laulaa aarioita [**t$_i$** oopperatalossa]?*
'What did Pulmu claim that Sirkku sings arias in operahouse'

c. **Milanon Pulmu väitti että Sirkku laulaa aarioita [**t$_i$** oopperatalossa].*
'Milan Pulmu claimed that Sirkku sings arias in operahouse'

(21) a. *Pulmu väitti että Sirkku syntyi [apinan vuotena].*
'Pulmu claimed that Sirkku was born during year of the monkey'

c. **Minkä Pulmu väitti että Sirkku syntyi [**t$_i$** vuotena]?*
'What did Pulmu claim that Sirkku was born the year of'

c. **Apinan Pulmu väitti että Sirkku syntyi [**t$_i$** vuotena].*
'The monkey Pulmu claimed that Sirkku was borh the year of'

(22) a. *Pulmu väitti että Sirkku laulaa aarioita [helmikuun 15. päivänä].*
'Pulmu claimed that Sirkku sings arias the 15th of February'

b. **Minkä kuun Pulmu väitti että Sirkku laulaa aarioita [**t$_i$** 15. päivänä]?*
'Which month did Pulmu claim that Sirkku sings arias the 15th of '

c. **Helmikuun Pulmu väitti että Sirkku laulaa aarioita [**t$_i$** 15. päivänä].*
'February Pulmu claimed that Sirkku sings arias the 15th of'

Moving now to Wh-islands, it has been proposed that the extraction of an

obligatory argument from a Wh-island gives a (slightly) better result than the extraction of an optional argument from a Wh-island. In Finnish, testing for Wh-islands are not really possible; this is because Finnish lacks verbs such as *wonder* appearing in Wh-island constructions, the same meaning being expressed by different types of clitics on the main verb. But the English and Swedish examples in [23] through [26] show very clearly that neither obligatory nor optional manner adverbials can be extracted from Wh-island constructions:[5]

(23) a. *?Which cat$_i$ do you wonder if Sirkku treats $t_i$ badly?*
b. *?Her cat$_i$ I wonder if Sirkku treats $t_i$ badly.*
c. *?Which aria$_i$ do you wonder if Sirkku sings $t_i$ beautifully?*
d. *?The aria$_i$ I wonder if Sirkku sings $t_i$ beautifully.*

(24) a. **How$_i$ do you wonder if Sirkku treats her cat $t_i$ ?*
b. **Badly$_i$ I wonder if Sirkku treats her cat $t_i$.*
c. **How$_i$ do you wonder if Sirkku sings the aria $t_i$ ?*
d. **Beautifully$_i$ I wonder if Sirkku sings the aria $t_i$.*

(25) a. *?Vilken katt$_i$ undrar du om Sirkku behandlar $t_i$ illa?*
b. *?Sin katt$_i$ undrar jag om Sirkku behandlar $t_i$ illa.*
c. *?Vilken aria$_i$ undrar du om Sirkku sjunger $t_i$ vackert?*
d. *?Arian$_i$ undrar jag om Sirkku sjunger $t_i$ vackert.*

(26) a. **Hur$_i$ undrar du om Sirkku behandlar sin katt $t_i$ ?*
b. **Illa$_i$ undrar jag om Sirkku behandlar sin katt $t_i$.*
c. **Hur$_i$ undrar du om Sirkku sjunger arian $t_i$ ?*
d. **Vackert$_i$ undrar jag om Sirkku behandlar sin katt $t_i$.*

[27] and [28] show that place and time adverbials behave similarly to manner adverbials with regard to Wh-islands - this suggests that, just like NP-island phenomena, Wh-island phenomena are sensitive to a distinction between elements which are Themes, and elements which some kind of express circumstantial adverbial meaning (ie manner, place, or time):

(27) a. **Where$_i$ do you wonder if Sirkku puts her cat $t_i$ ?*
b. **Outside$_i$ I wonder if Sirkku puts her cat $t_i$.*
c. **Where$_i$ do you wonder if Sirkku sings the aria $t_i$ ?*
d. **In La Scala$_i$ I wonder if Sirkku sings the aria $t_i$.*

(28) a. **When$_i$ do you wonder if Sirkku was born $t_i$ ?*

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[5] The fact that extraction of obligatory and optional manner adverbials from Wh-islands is impossible is also observed in Rizzi (1991). The judgments on the Swedish data in [25] and [26] are due to Christian Juslin (personal communication).

b. **17 years ago$_i$ I wonder if Sirkku was born $t_i$.*
c. **Which day$_i$ do you wonder if Sirkku sings the aria $t_i$ ?*
d. **On Wednesday$_i$ I wonder if Sirkku sings the aria $t_i$.*

Based on the preceding data and discussion, we can conclude that obligatory and optional manner adverbials are treated in a uniform way by the computational system of language; they are merged as unique specifiers of Manner-related vPs, and they undergo A'-movement in the same way, to the same positions. I will determine the actual location of the Manner-related vP in the next section.

# 6.2. The Position of Finnish Manner Adverbials

## 6.2.1. Evidence from Word Order

As pointed out in Chapter One, the most neutral, syntactically unmarked word order in Finnish is either SVA or, in the sentences which also contain a direct object, SVOA. This means that the manner adverbial follows either the lexical verb or the direct object in linear ordering:

(29) a. *Sirkku kävel-i ontu-ma-lla.*
Sirkku-Nom walk-past-3sg limp-3inf-Adess
'Sirkku walked with a limp'

b. *Sirkku laulo-i kaunii-sti.*
Sirkku-Nom sing-past-3sg beautiful-Adv
'Sirkku sang beautifully'

c. *Sirkku saapu-i vauhdi-lla.*
Sirkku-Nom arrive-pres-3sg speed-Adess
'Sirkku arrived with speed'

d. *Sirkku kuol-i tuskallise-sti.*
Sirkku-Nom die-past-3sg painful-Adv
'Sirkku died painfully'

(30) a. *Sirkku kohtel-i Pulmu-a hyv-in.*
Sirkku-Nom treat-past-3sg Pulmu-part-Adv good-Adv
'Sirkku treated Pulmu well'

b. *Sirkku muotoil-i kirje-en huole-lla.*
Sirkku-Nom formulate-past-3sg letter-sg-Acc care-Adess
'Sirkku formulated the letter with care'

c. *Lucky Luke ampu-i rosvo-n taitava-sti.*
Lucky Luke-Nom shoot-past-3sg robber-sg-Acc skilful-Adv
'Lucky Luke shot the robber skilfully'

d. *Sirkku laulo-i aaria-n tuntee-lla.*
Sirkku-Nom sing-past-3sg aria-ag-Acc feeling-Adess
'Sirkku sang the aria with feeling'

(31) a. *Sirku-lta hajos-i surffilauta rämähtä-e-n.*
Sirkku-Ablat break-pres-3sg surf board-sg-Nom crash-2inf-Instr
'Sirkku's surf board broke with a crash'

b. *Paraolympialais-i-ssa juos-ta-an satanen ontu-ma-lla.*
Paraolympic-pl-Iness run-pass-Agr 100 meters-Nom limp-3inf-Adess
'In the Paraolympics the 100 meters is run with a limp'

In Chapter Four, we have seen that Finnish manner adverbials have the form of KPs: this means that they have no case features which would need further checking and which would drive movement to a clausal functional projection. However, we have also seen in Chapter Four that Finnish direct objects have the form of DPs - they have a strong case feature [C] which needs to be checked in an appropriate clausal functional projection (ie in a Spec/AspectP and Spec/AgrOP), before the derivation reaches Spell-out. The fact that Finnish manner adverbials follow direct objects in sentences with neutral, syntactically unmarked word order suggests that manner adverbials are merged into a Spec/vP which is lower down in the structure than Spec/AgrOP. In other words, we are dealing with the situation illustrated in Diagram (6.4), or alternatively with the situation illustrated in Diagram (6.5):

Diagram (6.4)

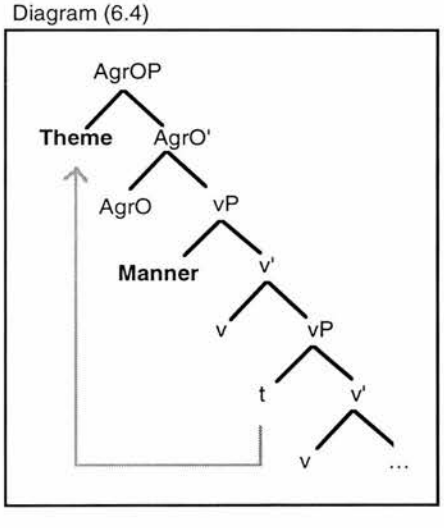
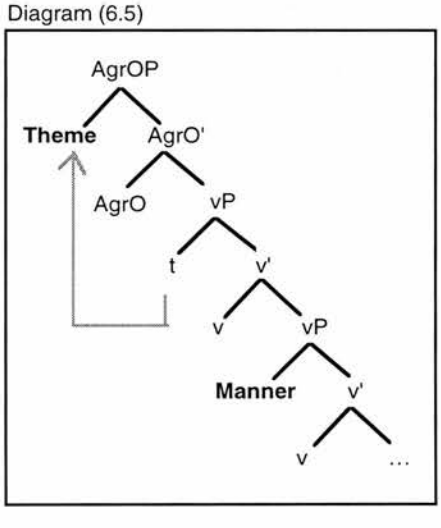



Diagram (6.5)




On the assumption that the universal hierarchy of semantic features is

*Prominence* →

[Agent [Experiencer [Goal/Source/Location [Theme [Oblique]]]]]

← *Order of Merge*

so that [Agent] is the most prominent and [Oblique], including [Manner], [Place] and [Time], the least prominent semantic feature of V, I assume that Diagram (6.5) describes the correct state of affairs. It also gives rise to a more economical derivation, in the sense that the chain CH=(DP, t) is formed as late in the derivation as possible, and the distance of movement is kept as short as possible - for the idea that elements which require movement, forming a chain CH, enter the derivation as late as possible, see also Chomsky (1995, 292). Finally, Diagram (6.5) is in keeping with the view maintained in McConnell-Ginet (1982) and Larson (1988) about lexical verbs combining with all obligatory or optional manner adverbials before combining with their subject and direct object arguments.

Summarising the discussion so far, word order facts suggest that Finnish direct objects occupy a structurally higher position than Finnish manner adverbials (at Spell-out). There are also other ways to test if Spec/AgrOP is a higher structural position than the Manner-related Spec/vP. In the following sub-sections, I discuss anaphor binding, superiority effects, and the behaviour of negative polarity items, to see if they provide any evidence for the situations illustrated i Diagrams (6.4) and (6.5).

## 6.2.2. Anaphor Binding

In binding theory, X binds Y iff X is in an argument position, X c-commands Y, and X and Y are co-indexed. In [32a-b] the subject, but not the direct object, is able to bind the empty anaphor *e* inside the manner adverbial:

(32) a. *Sirkku$_i$ kohteli Pulmua$_j$ [paremmin kuin e$_{i/*j}$ äiti-nsä].*
'Sirkku$_i$ treated Pulmu$_j$ better than her$_{i/*j}$ mother'

b. *Lucky Luke$_i$ ampui rosvoa$_j$ [nopeammin kuin e$_{i/*j}$ varjo-nsa].*
'Lucky Luke$_i$ shot the robber$_j$ faster than his$_{i/*j}$ shadow'

At first sight, the fact that the direct object, even though it appears in an argument position, cannot bind the empty anaphor *e* inside the manner adverbial, suggests that Spec/AgrOP is *not* a higher structural position than the Manner-related Spec/vP. But this is wrong. Van Steenbergen (1991) argues that the Finnish *e* is a long distance anaphor which can only be bound by a subject within a minimal maximal projection

containing Tense. In [32a-b], *e* is bound by the subject in Spec/AgrSP, and there is also a projection of Tense in between the binder and the bindee. It cannot be bound by the direct object because the direct object is not a subject, and also because there is no projection of Tense in between the binder and the bindee. So, on these assumptions, [32a-b] are *not* against the proposal that Spec/AgrOP is a higher structural position than the Manner-related Spec/vP.

However, [33a-b] seem to provide counter-examples to van Steenbergen's claim that the Finnish *e* is an empty anaphor which must always be bound by a subject within a minimal maximal projection containing Tense. In [33a-b], *e* seems to be bound by a direct object, within a minimal maximal projection *not* containing Tense:

(33) a. *Sirkku$_i$ kohtelee jokaista$_j$ [e$_{*i/j}$ ansio-nsa mukaisesti].*
'Sirkku$_i$ treats everyone$_j$ according to her$_{*i/j}$ deserts'

b. *[Sirkku ja Pulmu]$_i$ kohtelevat [Annia ja Helenaa]$_j$ [e$_{i/j}$ toiste-nsa sisarina].*
[Sirkku and Pulmu]$_i$ treat [Anni and Helena]$_j$ [as each other$_{i/j}$'s sisters].

However, there are strong reasons to believe that [33a] is an idiom so that it cannot be used to determine hierarchical relations - for example, if we change *ansio* 'deserts' into another noun, the binder is again the subject so that there is a projection of Tense in between the binder and the bindee:[6]

(33) c. *Sirkku$_i$ kohtelee jokaista$_j$ [e$_{i/*j}$ vaatimuste-nsa mukaisesti].*
'Sirkku$_i$ treats everyone$_j$ according to her$_{i/*j}$ requirements'

Secondly, although [33b] may seem to contain a manner adverbial, it is, in fact, ambiguous between containing a manner adverbial and a subject- or an object-oriented adverbial (a so-called *predikatiiviadverbiaali* 'predicative adverbial'):[7]

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[6] Note, though, that some dialects of Finnish would allow the direct object to bind *e* inside the manner adverbial.

[7] By subject- and object-oriented adverbials I mean adverbials which can be treated as predicates and which select the subject or the direct object as their "subject." In English, these adverbials would include the following (the "subject" is indicated in bold):

(i) **Sirkku** ate the carrots nude.
(ii) Sirkku ate **the carrots** raw.

In Finnish, subject- and object-oriented adverbials inflect and carry a feature for Essive or Translative case. For discussion, see Hakulinen & Karlsson (1979, 211ff.) and Vilkuna (1996, 169ff.). For discussion on English subject- and object oriented

(continued =>)

(33) d. *Sirkku and Pulmu regard Anni and Helena as each other's (Sirkku's and Pulmu's) sisters.*

e. *Sirkku and Pulmu regard Anni and Helena as each other's (Anni's and Helena's) sisters.*

On the basis of these considerations, I conclude that binding theory does not provide any evidence against the proposal that Finnish direct objects occupy a structurally higher position than Finnish manner adverbials (ie that Spec/AgrOP is a higher structural position than the Manner-related Spec/vP).

### 6.2.3. Superiority Effects

In the minimalist program, Wh-elements are interpreted as operators binding variables; this means that all Wh-elements must appear in operator positions at LF. For Wh-elements, the relevant operator position is Spec/CP - C has a Wh-feature which triggers Wh-movement, and the economy conditions force the movement of the closest Wh-element to Spec/CP. The level at which Wh-movement takes place is subject to parametric variation: in the Slavic languages, all Wh-elements must raise in the overt syntax whereas in languages like Chinese, they must wait until after Spell-out. The following examples are from Progovac (1994, 32) and from Lasnik & Saito (1992, 6):

(34) a. *Gde (t)ko spava?* *Serbo-Croatian*
where who sleeps
'Who sleeps where'

b. *Sta (t)ko (t)ko-me nudi?*
what who who-DAT offers
'Who offers what to whom'

(35) a. *ni xihuan shei* *Chinese*
you like who
'Who do you like'

b. *wo xiang-zhidao Lisi mai le sheme*
I wonder Lisi bought what
'I wonder what Lisi bought'

In Finnish, only one of the Wh-elements is allowed to raise overtly to Spec/CP,

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adverbials, see Rapoport (1991). I assume that even subject- and object oriented adverbials are merged as specifiers of an appropriate light v.

while the others must wait until after Spell-out. The Wh-element which raises overtly is determined by the economy conditions on derivations and by the requirement for Shortest Move. Thus, an element α cannot raise overtly to X if there is an element β such that the overt raising of β to X produces a shorter and a less costly move, resulting in a more economical derivation. In [36] and [37], the shortest move is from Spec/AgrSP to Spec/CP. Although convergent, the derivations in [37] fail to be optimal - the overt raising of *kuka* 'who' to Spec/CP would have produced a shorter and a less costly move than the overt raising of *miten* 'how' to Spec/CP:

(36) a. *Kuka$_i$ [$_{AgrSP}$ t$_i$ käyttäytyi miten]?*
'Who behaved how'

b. *Kuka$_i$ [$_{AgrSP}$ t$_i$ ampui miten]?*
'Who shot how'

c. *Kuka$_i$ [$_{AgrSP}$ t$_i$ saapui miten]?*
'Who arrived how'

(37) a. **Miten$_i$ [$_{AgrSP}$ kuka käyttäytyi t$_i$]?*
'How who behaved'

b. **Miten$_i$ [$_{AgrSP}$ kuka ampui t$_i$]?*
'How who shot'

c. **Miten$_i$ [$_{AgrSP}$ kuka saapui t$_i$]?*
'How who arrived?

On the assumption that Spec/AgrOP is a higher structural position than the Manner-related Spec/vP, we would expect [38a-c] to be grammatical, [39a-c] ungrammatical (ie we would predict that [39a-c], although convergent, fail to be optimal). But in Finnish multiple Wh-questions involving direct objects and manner adverbials, superiority effects do not seem to hold:

(38) a. *Ketä$_i$ Sirkku kohteli [$_{AgrOP}$ t$_i$ miten]?*
'Who did Sirkku treat how'

b. *Ketä$_i$ Lucky Luke ampui [$_{AgrOP}$ t$_i$ miten]?*
'Who did Lucky Luke shoot how'

c. *Mikä$_i$ Sirkulta hajosi [$_{AgrOP}$ t$_i$ miten]?*
'What from Sirkku broke how'

(39) a. *Miten$_i$ Sirkku kohteli [$_{AgrOP}$ ketä t$_i$]?*
'How did Sirkku treat who'

b. *Miten$_i$ Lucky Luke ampui [$_{AgrOP}$ ketä $t_i$]?*
'How did Lucky Luke shoot who'

c. *Miten$_i$ Sirkulta hajosi [$_{AgrOP}$ mikä $t_i$]?*
'How from Sirkku broke what'

In languages like English, superiority effects between direct objects and manner adverbials do hold, so that sentences like [41a-b] are ruled out by economy conditions on derivations:

(40) a. *Who does Sirkku treat how?*
b. *Who did Lucky Luke shoot how?*

(41) a. **How does Sirkku treat who?*
b. **How did Lucky Luke shoot who?*

Although the Finnish data in [38] and [39] do not provide any evidence for the proposal that Spec/AgrOP is a higher structural position than the Manner-related Spec/vP, they do not, however, provide any evidence *against* it either. In order to explain why superiority effects do not hold between Finnish direct objects and manner adverbials, we could try to argue, much in line with Ura (1995, 252f.) and Kitahara (1997, 65ff.), for a system within which direct objects and manner adverbials are somehow equidistant from the target of movement (ie from Spec/CP). But the data in [42] and [43] show that superiority effects do not hold in Finnish even between the direct objects and some higher sentence elements, such as the indirect objects:

(42) a. *Kene-lle$_i$ Sirkku anto-i $t_i$ [$_{AgrOP}$ mit-ä]?*
Who-Allat Sirkku-Nom give-past-3sg what-Part
'To whom did Sirkku give what'

b. *Kene-lle$_i$ Sirkku lauloi $t_i$ [$_{AgrOP}$ mi-tä]?*
Who-Allat Sirkku-Nom sing-past-3sg what-Part
'To whom did Sirkku sing what'

c. *Kene-lle$_i$ Sirkku laulo-i $t_i$ [$_{AgrOP}$ [$_{vP}$ miten]]?*
Who-Adess Sirkku-Nom sing-past-3sg how
'To whom did Sirkku sing how'

d. *Kene-lle$_i$ Sirkku huus-i $t_i$ [$_{AgrOP}$ [$_{vP}$ mi-llä tava-lla]]?*
Who-Allat Sirkku-Nom shout-past-3sg what-Adess way-Adess
'To whom did Sirkku shout in what way'

(43) a. *Mit-ä$_i$ Sirkku anto-i kene-lle [$_{AgrOP}$ $t_i$ ]?*
What-Part Sirkku-Nom give-past-3sg who-Allat
'What did Sirkku give to whom'

b. *Mit-ä$_i$ Sirkku laulo-i kene-lle [$_{AgrOP}$ t$_i$ ]?*
What-Part Sirkku-Nom sing-past-3sg who-Allat
'What did Sirkku sing to whom'

c. *Miten$_i$ Sirkku laulo-i kene-lle [$_{AgrOP}$ [$_{vP}$ t$_i$ ]]?*
How Sirkku-Nom sing-past-3sg who-Allat
'How did Sirkku sing to whom'

d. *Mi-llä tava-lla$_i$ Sirkku huus-i kene-lle [$_{AgrOP}$ [$_{vP}$ t$_i$ ]]?*
What-Adess way-Adess Sirkku-Nom shout-past-3sg who-Allat
'In what way did Sirkku shout to whom'

These data suggest that in Finnish, for some reason, superiority effects hold only between a subject in Spec/AgrSP and another argument which appears in some lower (original or derived) specifier position. But buperiority effects do *not* hold between two arguments a and b, both of which appear in such lower specifier positions.

## 6.2.4. Negative Polarity

In this sub-section, I examine if the behaviour of negative polarity items provides any evidence for or against the proposal that Spec/AgrOP is a higher structural position than the Manner-related Spec/vP. According to Hakulinen & Karlsson (1979, 269) and Vilkuna (1996, 260ff.), Finnish polarity items include clitics like *-kin/-kaan* and pronouns like *joku/kukaan* 'someone/no one', *jotakin/mitään* 'something/nothing' and *kukin/kukaan* 'each/no one'. The positive items of these pairs are licensed only in positive contexts, and the negative items in negative contexts - being bound by the negative verbal element *ei* or the negative sentence adverbial *tuskin* 'hardly' is a case in point. In [44a-b] and [45a-b], the negative element is contained in the direct object while the negative polarity item is contained in the manner adverbial. In [44c-d] and [45c-d], the negative polarity item is contained in the direct object, and the negative element in the manner adverbial:

(44) a. *Sirkku kohteli tuskin ketään millään noista tavoista.* *Finnish*
'Sirkku treated hardly anyone in any of those ways'

b. *Sirkku ampui tuskin ketään millään noista tavoista.*
'Sirkku shot hardly anyone in any of those ways'

c. **Sirkku kohteli ketään tuskin millään noista tavoista.*
'Sirkku treated anyone in hardly any of those ways'

d. **Sirkku ampui ketään tuskin millään noista tavoista.*
'Sirkku shot anyone in hardly any of those ways'

(45) a. *Sirkku treated no one in any of those ways.* *English*
b. *Sirkku shot no one in any of those ways.*
c. **Sirkku treated anyone in none of those ways.*
d. **Sirkku shot anyone in none of those ways.*

The fact that [44a-b] and [45a-b] are grammatical while [44c-d] and [45c-d] are not suggests that a negative element inside a direct object is able to bind a negative polarity item inside a manner adverbial, but not vice versa. This is strong evidence for the proposal that Spec/AgrOP is a structurally higher position than the Manner-related Spec/vP.

Let us now look briefly at the following set of examples:

(46) a. *Kukaan$_i$ ei kohdellut* $\mathbf{t_i}$ *ketään millään noista tavoista.*
Anyone not treated anyone in any of those ways
'No one treated no one in any of those ways'

b. *Kukaan$_i$ ei ampunut* $\mathbf{t_i}$ *ketään millään noista tavoista.*
Anyone not shot anyone in any of those ways
'No one shot no one in any of those ways'

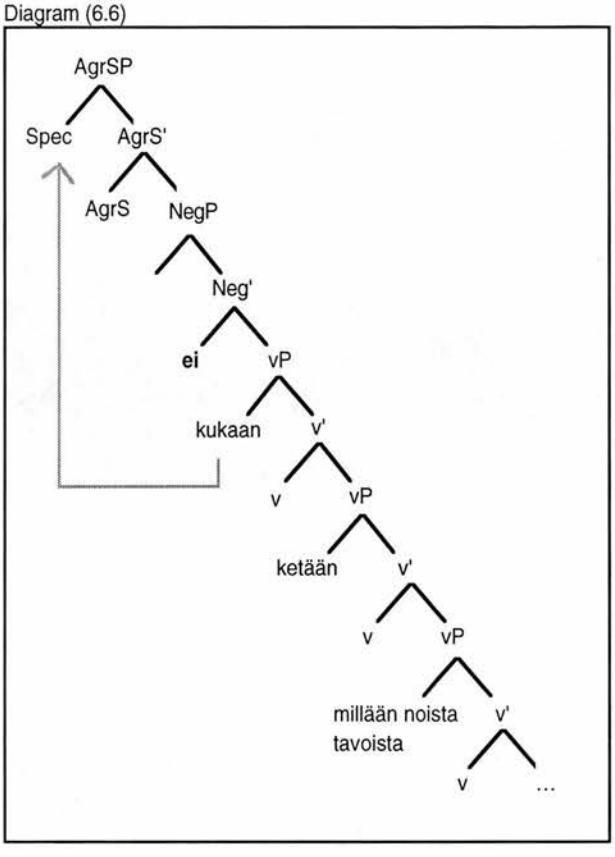
c. **Kukaan$_i$ kohteli* $\mathbf{t_i}$ *jotakuta jollain noista tavoista.*
'Anyone treated someone in one of those ways'

d. **Kukaan$_i$ ampui* $\mathbf{t_i}$ *jonkun jollain noista tavoista.*
'Anyone shot someone in one of those ways'

In the discussion so far, we have assumed that the binding relation between the negative element and the negative polarity item is established only after movement has taken place. But [46a-d] suggest that it must sometimes be established *before* the movement operation. On the assumption that negative polarity items can only be licensed in contexts where they are bound by negative elements, Diagram (6.6) shows that the negative polarity item *kukaan* 'anyone' in [46a-b] can be bound by a negative element in its original position of merge, but not in its derived position (which is Spec/AgrSP):[8]

[8] Whether or not the negative polarity item must be bound by a negative element in its original or derived position seems to be subject to parametric variation: in Finnish sentences like [46] and *[Kenenkään ystäväni veljeä]$_i$ en ole tavannut* $\mathbf{t_i}$ 'A brother of any friend, I haven't met $\mathbf{t_i}$' are fine whereas in English, they are not.

Diagram (6.6)




Sentences like [47a-d] suggest that, because the positive item of the pair *someone-anyone* can be licensed in both negative and positive contexts, the licensing of polarity items must be related to more complex phenomena than previously thought (at least, the requirement that the positive items of the pairs *someone/anyone* and so on, can only be licensed in positive contexts and the negative items in negative contexts needs to be relaxed, to account for the data in [46] and [47]):

(47) a. *Joku$_i$ ei kohdellut* $\mathbf{t_i}$ *ketään millään noista tavoista.*
'Someone did not treat anyone in any of those ways'

b. *Joku$_i$ ei ampunut* $\mathbf{t_i}$ *ketään millään noista tavoista.*
'Someone did not shoot anyone in any of those ways'

c. *Joku$_i$ kohteli* $\mathbf{t_i}$ *jotakuta jollain noista tavoista.*
'Someone treated someone in one of those ways'

d. *Joku$_i$ ampui* $\mathbf{t_i}$ *jonkun jollain noista tavoista.*
'Someone shot someone in one of those ways'

In conclusion, if the binding relation between the negative element and the negative polarity item can only be established before movement has taken place, then

the behaviour of negative polarity items in sentences like [44a-d] and [45a-d] provides evidence for the proposal that the original position of merge in direct objects is a higher structural position than the Manner-related Spec/vP. This is a very welcome result, given our assumptions about the structure illustrated by Diagram (6.5). But even if binding relations can only be established *after* movement has taken place, the behaviour of negative polarity items in sentences like [44a-d] and [45a-d] provides strong evidence for the proposal that Spec/AgrOP is a higher structural position than the Manner-related Spec/vP.

## 6.3. The Relation between Finnish Manner, Place and Time Adverbials

In the previous section, we looked at the relationship between Finnish direct objects and manner adverbials. We determined that direct objects, because they have the form of DPs, have the case feature [C] which needs checking in a Spec/AspectP and Spec/AgrOP, before the derivation reaches Spell-out. But manner adverbials, because they have the form of KPs, are allowed to remain in their original positions of merge throughout the derivation. We then examined the linear ordering of words, and some other properties, of Finnish neutral, syntactically unmarked sentences and concluded that direct objects occupy a higher structural position than manner adverbials.

In this section, I examine the relation between Finnish sentence-final manner, place and time adverbials. In Chapter Four, we have seen that Finnish place and time adverbials also typically have the form of KPs; because KPs have no case features which would need further checking in a clausal functional projection, we can assume that these adverbials are also allowed to remain in their original positions of merge throughout the derivation. [48] and [49] show that Finnish place and time adverbials follow direct objects in sentences which have focus-neutral interpretation: if we use question-answers pairs to determine the focus structure of the sentences, we see that [48a] and [48b], and [49a] and [49b], cannot easily serve as answers to the same question (eg *What happened?*):

(48) a. *Sirkku ampui Pulmun rannalla.*
'Sirkku shot Pulmu on the beach'

b. *Sirkku ampui rannalla Pulmun.*
'It was Pulmu who Sirkku shot on the beach'

(49) a. *Sirkku ampui Pulmun keskiviikkona.*
'Sirkku shot Pulmu on Wednesday'

b. *Sirkku ampui keskiviikkona Pulmun.*
'It was on Wednesday that Sirkku shot Pulmu'

On the basis of these data, I propose that [48a] and [49b] reflect the normal hierarchical structure, while [48b] and [49b] have been derived by means of focus-related movement. I further propose that, just like manner adverbials, Finnish place and time adverbials occupy positions which are lower down in the structure than Spec/AgrOP. The idea that Finnish place and time adverbials occupy positions which are lower down than Spec/AgrOP is supported by the following examples involving the licensing of negative polarity items - a negative element inside a direct objects is able to license a negative polarity item inside an adverbial, but a negative polarity item inside a direct object cannot be licensed by a negative element inside an adverbial:

(50) a. *Sirkku ampui tuskin ketään missään noissa paikoissa.*
'Sirkku shot hardly anyone in any of those places'

b. *Sirkku ampui tuskin ketään yhtenäkään noista päivistä.*
'Sirkku shot hardly anyone in any of those days'

c. **Sirkku ampui ketään tuskin missään noista paikoissa.*
'Sirkku shot anyone in hardly any of those places'

d. **Sirkku ampui ketään tuskin yhtenäkään noista päivistä.*
'Sirkku shot anyone in hardly any of those days'

(51) a. *Sirkku shot nobody in any of those places.*
b. *Sirkku shot nobody in any of those days.*
c. **Sirkku shot anybody in none of those places.*
d. **Sirkku shot anybody in none of those days.*

So, in the discussion so far, we have seen that manner, place and time adverbials appear in positions which are lower doen in the structure than direct objects. But what is the mutual relation between Finnish manner, place and time adverbials? [52] through [55] show that there is no constraint on the mutual ordering of Finnish manner, place and time adverbials. In other words, it does not seem to matter whether the manner adverbial precedes or follows the place adverbial, and whether the place adverbial precedes or follows the time adverbial - instead, all the sentences in [52] through [55] have equally neutral word order, in the sense that a change in the mutual ordering of adverbials does not entail any focussing effects. If we use a question/answer test to

determine the focus structure of the sentences, we see that they can all serve as answers to the same question (eg *What happened?*):[9]

(52) a. *Sirkku ampui Pulmun rannalla taitavasti.*
'Sirkku shot Pulmu on the beach skilfully'

b. *Sirkku ampui Pulmun taitavasti rannalla.*
'Sirkku shot Pulmu skilfully on the beach'

(53) a. *Sirkku ampui Pulmun keskiviikkona taitavasti.*
'Sirkku shot Pulmu on Wednesday skilfully'

b. *Sirkku ampui Pulmun taitavasti keskiviikkona.*
'Sirkku shot Pulmu skilfully on Wednesday'

(54) a. *Sirkku ampui Pulmun keskiviikkona rannalla.*
'Sirkku shot Pulmu on Wednesday on the beach'

b. *Sirkku ampui Pulmun rannalla keskiviikkona.*
'Sirkku shot Pulmu on the beach on Wednesday'

(55) a. *Sirkku ampui Pulmun taitavasti rannalla keskiviikkona.*
'Sirkku shot Pulmu skilfully on the beach on Wednesday'

b. *Sirkku ampui Pulmun taitavasti keskiviikkona rannalla.*
'Sirkku shot Pulmu skilfully on Wednesday on the beach'

c. *Sirkku ampui Pulmun rannalla taitavasti keskiviikkona.*
'Sirkku shot Pulmu on the beach skilfully on Wednesday'

d. *Sirkku ampui Pulmun rannalla keskiviikkona taitavasti.*
'Sirkku shot Pulmu on the beach on Wednesday skilfully'

e. *Sirkku ampui Pulmun keskiviikkona taitavasti rannalla.*
'Sirkku shot Pulmu on the beach skilfully on Wednesday'

f. *Sirkku ampui Pulmun keskiviikkona rannalla taitavasti.*
'Sirkku shot Pulmu on Wednesday on the beach skilfully'

[52] through [55] are problematic for Kayne's theory of LCA. This is because, in order to be able to differ in linear ordering, the sentences would have to differ in hierarchical structure. Although one could come up with an analysis according to which the sentences in [52] through [55] differ in hierarchical structure, it is difficult to find motivation for it. For example, one could argue that all the different linear orders in [52] through [55] reflect different "base-generated" hierarchical structures. This line of reasoning would mean that the computational system of language is able to form

[9] Of course, the more sentence final adverbials a sentence contains, the more "heavy" and unnatural it becomes.

different types of derivations, by utilising the same set of linguistic items - but again, it would not be very elegant or restrictive to say that once a derivation is formed in one way, and once in another way with exactly the same meaning, by the computational system of language. And given the assumption that particular types of adverbials must be merged as specifiers of particular light v heads, it would also mean having to abandon the idea that all functional and light v projections are hierarchically ordered, according to a strict universal hierarchy.

One could alternatively argue that the different linear orders in [52] through [55], even though they have the same underlying structure, result from movement. According to this line of reasoning, while one of the sentences might directly reflect the original "base generated" hierarchical structure, the others reflect a derived hierarchical structure. However, although the idea that different linear orders are the result of movement is able to account for sentences like [48] and [49] which involve a change in the focus structure of the sentence, it is problematic for the analysis of sentences like [52] through [55]. This is because within the minimalist framework, movement is driven by feature checking; but in [52] through [55], it is unclear what would drive the movement of the manner, place or time adverbials across one another, as it is not immediately obvious what features they would have to check, and in what structural positions these checking operations would take place. The adverbials, because they have the form of KPs, have no case features which would need further checking and which would drive their overt movement to the specifier of an Agreement phrase. And because they display free linear ordering without entailing any focussing effects, it is not reasonable to suppose that they have some kind of focus features either which could drive their overt movement to the specifier of a Focus phrase.

Because both of the analyses presented so far involve problems, I will continue to assume that in sentences like [52] though [55], one and only one hierarchical structure is produced - this allows us to maintain the idea that all light vPs are hierarchically ordered, according to a strict universal hierarchy. Note, however, that it is not easy to determine what this unique hierarchical structure might be; while [56] suggest that manner adverbials might be structurally inferior to (ie that they might occupy a structurally lower position than) place or time adverbials, [57] show that this data is not conclusive. In other words, on the assumption that particles appear in a position which is next to the lexical V, the facts in [56a-c] follow if manner adverbials are closer to V than place or time adverbials; but [57a-c] show that this does not hold of all manner adverbials, and that not all particles allow even manner adverbials in between themselves and the lexical V - cf. McConnell-Ginet (1982), Costa (1996), Ernst (1998), Laenzlinger (1996; 1998), Stroik (1996), and Adger & Tsoulas (1999):

(56) a. *Sirkku went angrily away.*
b. *??Sirkku went northwards away.*
c. *??Sirkku went yesterday away.*

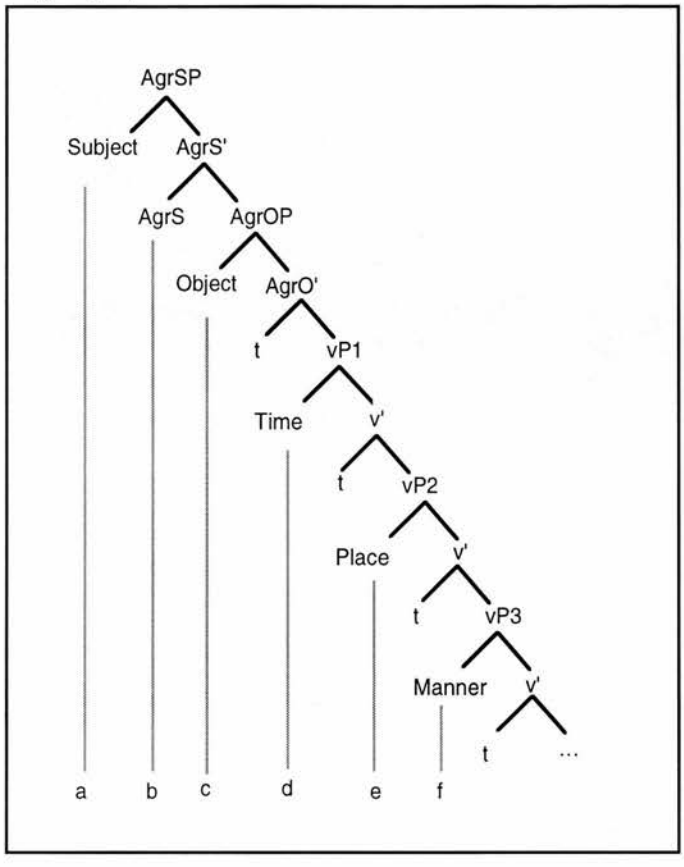
(57) a. *??Sirkku went in a angry way away.*
b. *??Sirkku went in a very hasty manner away.*
c. *??Sirkku put everyone rudely off.*
d. *??Sirkku ate peas sloppily up.*

For the sake of convenience, I will assume, much in line with Laenzlinger (1996; 1998) and Adger & Tsoulas (1999) but contra Stroik (1996), that the order in which manner, place, and time adverbials enter the derivation is manner-place-time, so that manner adverbials appear in to lowest possible Spec/vP position.

However, rather than assuming that the different linear orders in [52] through [55] result from movement, let us return to the modified version of LCA proposed in Chapter Five. In that chapter, I argued that asymmetric c-command always directly corresponds to linear precedence: an element $\alpha$ which asymmetrically c-commands $\beta$ in hierarchical structure, precedes $\beta$ is linear order. However, I further argued that $\alpha$ and $\beta$ cannot be seen and linearly ordered by the asymmetric c-command relation if they appear in different "segments" of one and the same category XP. Because Finnish manner, place and time adverbials have the form of KPs, they are allowed to remain in their original Spec/vP positions throughout the derivation. And because these Spec/vP positions are lower down in the structure than the position occupied by the direct object, we can conclude that we are dealing with the situation illustrated in Diagram (6.7) - irrelevant projections have been omitted:[10]

[10] Adger & Tsoulas (1999) propose that circumstantial manner, place, and time adverbials might appear in specifiers of light vPs which are lower down in the structure than the lexical V head (ie there is a lexical root which raises through these light v projections to lexical $V^0$) - the fact that circumstantial adverbials are embedded lower down in the structure than the lexical $V^0$ might then explain why these adverbials cannot be extracted in NP- and Wh-island constructions (cf. the examples discussed in sub-section 6.1.5.). I will leave this open fur future research.

Diagram (6.7)




Given our modified version of assummetric c-command, the d(A) is <a, b>, <a, c>, <a, d>, <a, e>, <a, f>; <b, c>, <b, d>, <b, e>, <b, f>; <c, d>, <c, e>, >c, f>, by virtue of the subject, the verb, and the direct object asymmetrically c-commanding the adverbials in the specifiers of $vP_1$, $vP_2$, and $vP_3$. Because the d(A) does not contain the pairs <d, e>, <d, f>, <e, f>, no mutual ordering is specified for the terminals d, e, and f. And because no ordering is specified for these terminals (ie for the manner, place and time adverbials), they are free to occur in any order (ie they can be linearized in any order in the PF component of grammar). The structure is perfectly well-formed, given our particular relaxation of the totality requirement on the ordering relation.

## 6.4. The Status of Manner Adverbials as Specifiers of v vs Complements of V

In the system of adverbials proposed in Alexiadou (1997), manner adverbials are

analysed as *complements* of V, whereas the system developed here is based on the assumption that they are merged as specifiers of Manner-related vPs, under semantic feature checking. In this section, I show that the data given in support of their complement status can be accounted for, and do not provide arguments against, an analysis of manner adverbials as specifiers of light vPs in a VP-shell structure.

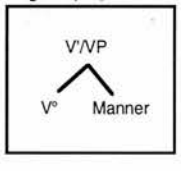
As we have seen in Chapter Three, Alexiadou (1997, 129ff.) distinguishes between specifier-type and complement-like adverbials, and makes the following generalization:

> *Generalization*
> Specifier-types adverb[ial]s have their base position to the left of the verb (non-thematic, specifiers of NegPs, AspectPs), hence they are VP-external. Complement-like ones have their base-position to the right of the verb, hence they are VP-internal.

She treats manner adverbials as complement-like adverbials because they "correspond to optional arguments of V" and because "they are parallel to NPs in that they restrict the range of events denoted by the verb." However, these statements are in no way contradictory to an analysis of manner adverbials as specifiers of light vPs - rather, the system developed here is based on the assumption that all arguments of V, whether they be obligatory or optional, are merged as specifiers of light vPs in a VP-shell structure, so that they can all be seen as restricting the range of events denoted by the verb.

McConnell-Ginet (1982) and Larson (1988; 1990) propose that lexical verbs combine with manner adverbials before combining with their subject and direct object arguments. Alexiadou takes this to point towards the following types of structures:

Diagram (6.8)




But lexical verbs can be seen to combine with manner adverbials before combining with their subject and direct object arguments even if the manner adverbials are merged as specifiers of vPs, rather than as complements of V. In structures of this kind, the vP containing the manner adverbial and the lexical V also correctly picks out a subset of the set of events denoted by the lexical verb alone.[11]

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[11] Under this view, the semantic effect of manner adverbials can be analysed as a function which maps a set onto a subset of that set. See also Cann (1993, 108f.).

Thirdly, Alexiadou argues for the complement of V status on the basis of Greek adverb incorporation structures - she proposes that the following Greek data can be explained only if the incorporating manner adverbial is in a complement of V position. All the examples and glosses in [58] are from Alexiadou (1997, 179f.):

(58) a. *O Janis ferete kala.* *Greek*
The-John-Nom behaves well
'John behaves well'

b. *O Janis kaloferete.*
The-John well-behaves

c. *I Maria dinete kala.*
The-Mary-Nom dress-pass-3sg well
'Mary dresses well'

d. *I Maria kalodinete.*
The-Mary well-dresses

e. *Efaga kala.*
ate-1sg well

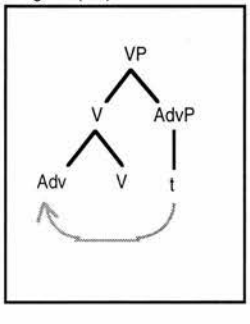
f. *Kaloefaga.*
well-ate-1sg

g. *Petaksa gorga.*
flew-1sg fast
'I flew fast'

h. *Gorgopetaksa.*
fast-flew-1sg

According to Alexiadou (1997, 182ff.) the manner adverb(ial)s must be complements of V because otherwise they would not be able to incorporate into lexical $V^0$s:

Diagram (6.9)




However, adverb incorporation in Greek seems to be limited to bisyllabic adverbs. The following Greek data were provided by Dora Alexopoulou and George

Tsoulas (personal communication):[12]

(59) a. *<u>*Ashimaferete.*</u>
'badly-behave'

b. *<u>*Grigoropetaksa.*</u>
'fast-flew'

In some langauges, subjects, indirect objects and direct objects are also allowed to incorporate into lexical $V^0$ heads; see eg Baker (1988). Hence, the small advantage that is gained by proposing that manner adverbs can incorporate into lexical $V^0$s because they appear in its complement position is outweighed by the problems caused by the incorporation of these other categories. So, given the somewhat idiosyncratic nature of Greek adverb incorporation, I conclude that it might involve language-specific assumptions which are not provided by UG, rather than principles which are provided by UG and which apply universally to all languages.

Some motivation for the complement of V status can also be found in Larson (1988; 1990). He analyses all obligatory and optional adverbials as complements of the lexical V because, he argues, they are able to raise, together with the lexical V, in heavy NP-shift constructions. The following examples are from Larson (1990, 607):

(60) a. *I [saw <u>at the conference yesterday</u>]$_i$ everyone who believes in UFOs* $\boldsymbol{t}_i$
b. *John [put <u>in the cooler</u>]$_i$ some new imported beer* $\boldsymbol{t}_i$

The same line of reasoning could be used to account for the Finnish data in [61a-b]:

(61) a. *Sirkku [kohteli <u>huonosti</u>]$_i$ ystävääsä jolla oli jalka poikki* $\boldsymbol{t}_i$.
'Sirkku treated badly her friend who had a broken leg'

b. *Sirkku [ampui <u>taitavasti</u>]$_i$ presidenttiä joka oli valehdellut Amerikan kansalle naisseikkailuistaan* $\boldsymbol{t}_i$.
'Sirkku shot skilfully the president who had lied to the American people about his womanizing'

In bare phrase structure, the lexical V raises all the way to AgrS while the direct object raises to Spec/AgrOP. In heavy NP-shift, the linear ordering manner adverbial-direct object could then be due to the manner adverbials scrambling leftwards on their own or alternatively, to the heavy direct objects shifting rightwards to some right-

[12] According to Artemis Alexiadou (personal communication) multisyllabic incorporation structures such as *<u>Anapodogirisa.</u>* 'upside-down-turn' are still possible.

branching specifier position (note, however, that rightward movement is not compatible with the LCA; nor is it maintained in the bare theory). However, the important point is that the manner adverbials can *never* raise together with the lexical verb, as suggested by Larson, because a non-head cannot undergo head-to-head movement to AgrS.

In this section, we have looked briefly at some arguments which have been given in support of the analysis of manner adverbials as complements of V, rather than as specifiers of v in a layered VP-shell structure - we have seen that none of these arguments is contradictory to the idea that manner adverbials are merged as specifiers of light vPs. Given the assumption that particular types of adverbials must always be merged as specifiers of particular light v heads, so that the semantic features of the adverbials can be checked against the corresponding features on the complex light v heads at the point of merge, this analysis should, in fact, be preferred; while a specifier-head relation is a proper checking relation, a head-complement relation is not.

## 6.5. Manner Adverbials in Finnish Participial Constructions

In the previous sections, we have discussed the hierarchical position of manner adverbials within the Finnish clausal domain. But manner adverbials can also appear within the Finnish *subclausal* domain:

(62) a. *[$_{PcpP}$ Hyvinkäyttäyty-nyt] oppilas*
Well+behave-2pcp-Nom student-sg-Nom
'A wellbehaved student'

b. *[$_{PcpP}$ Käs-i-nkudo-tt-u] villapusero*
Hand-pl-Instr+knit-pass-2pcp-Nom sweater-sg-Nom
'A handknit sweater'

In [62a-b], the PcpPs function as modifiers of $N^0$ heads. In line with the normal assumptions, I hypothesize that they are merged as specifiers of NPs, and they show case and number agreement with the $N^0$ heads. I call such PcpPs *attributive PcpPs,* to show that they have a similar function to attributive AdjPs.

In [63a-b], however, the $N^0$ head takes a relative clause containing a manner adverbial as its specifier or complement - I will call PcpPs which are inside relative

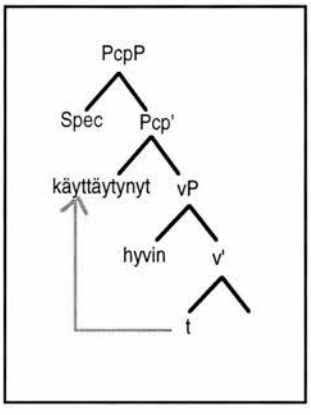
clauses *true PcpPs:*[13]

(63) a. *Oppilas [$_{RelCl}$ joka o-n [$_{PcpP}$ käyttäyty-nyt <u>hyvin</u>]].*
Student-Nom who be-pres-3sg behave-2pcp well
'A student who has behaved well'

b. *Villapusero [$_{RelCl}$ joka o-n [$_{PcpP}$ kudo-tt-u <u>käs-i-n</u>]].*
Sweater-Nom which be-pres-3sg knit-pass-2pcp hand-pl-Instr
'A sweater which has been knit by hand'

Based on the discussion on Finnish clausal functional projections in Chapter Two, I propose that Finnish true PcpPs have the following post-movement structure - all irrelevant projections have been omitted:

Diagram (6.10)




A first sight, one could argue that Finnish attributive PcpPs and true PcpPs have the same "base-generated" structure so that the sentences in [62] have been derived from the sentences in [63], by means of adverb incorporation - this would, in fact, be an argument for the analysis of manner adverbials as complements of V, rather than as specifiers of v. In other words, the manner adverbials could have undergone incorporation into the participial $V^0$s, and the $V^0$s could then have undergone head-to-head movement to Pcp, for feature checking purposes. This situation is illustrated in Diagrams (6.11) and (6.12) below:

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[13] Traditionally, the $N^0$ head is seen as taking the relative clause as its complement. In the bare theory, it could also select it as a specifier (ie as a specifier of NP); the correct linear ordering would then result from moving the N head overtly to D. Whether or not the relative clause is a complement or a specifier of NP is not relevent for the discussion here.

Diagram (6.11)

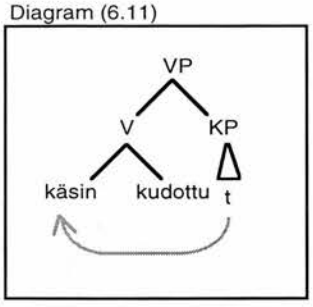
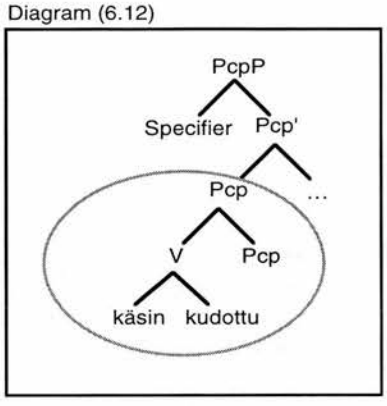



Diagram (6.12)




If Holmberg et al (1993) and Cinque (1997) are correct in assuming that adverbials like *aina/always* are merged as specifiers of Pcp projections, then the following set of examples could be taken to support this analysis:

(64) a. *[Aina hyvinkäyttäyty-nyt] oppilas*
Always wellbehave-2pcp-Nom student-Nom
'An always wellbehaved student'

b. *[Aina hyvinhoide-tt-u] puutarha*
Always wellcare-pass-2pcp-Nom garden-Nom
'An always wellcared for garden'

However, the idea that attributive PcpPs are derived from true PcpPs, by means of incorporating the manner adverbials into the participial $V^0$ heads, is not only problematic but wrong. Recall that only $X^0$ heads can incorporate. [65a-d] show that manner adverbials which are maximal projections, rather than $X^0$ heads, can also appear in these preverbal positions - this is strong evidence against the incorporation analysis:

(65) a. *[Kova-lla vauhdi-lla kulke-nut] juna*
Great-Adess speed-Adess move-2pcp-Nom train-Nom
'A fastmoving train'

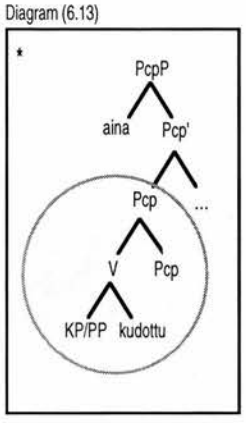
b. *[Hyvä-llä mau-lla pukeutu-nut] nainen*
Good-Adess taste-Adess dress-2pcp-Nom woman-Nom
'A woman who has dressed with good taste'

c. *[Päin mänty-ä men-neet] asia-t*
To pine-Part go-2pcp-pl-Nom thing-pl-Nom
'Things that went wrong'

d. *[Kuri-n kanssa kasvate-tt-u] lapsi*
Discipline-Acc with bring up-pass-2pcp-Nom child-Nom
'A child that has been brough up with discipline'

If the incorporation analysis was the correct one, the sentences in [65a-d] would have to involve the following type of (impossible) situation:

Diagram (6.13)




If we still continue to assume that Diagram (6.10) illustrates the structure of both attributive and true PcpPs in Finnish, we could try to raise the whole maximal projection vP to Spec/PcpP as one unit. But again, a maximal projection such as vP cannot raise and adjoin to a head position. So this analysis is also out. We could also try raising the participial $V^0$ and the manner adverbial singly into the relevant positions within the PcpP. But in this case, if Holmberg et al and Cinque are correct in that Spec/PcpP is the position of adverbials like *aina/always,* we would expect the constructions in [66] to be ungrammatical - there should be no structural position in between the specifier and the head of PcpP, for the manner adverbial to move into:

(66) a. *[Aina hyvinkäyttäytynyt] oppilas*
'An always wellbehaved student'

b. *[Aina hyvinhoidettu] puutarha*
'An always well-cared for garden'

c. *[Aina itsekkäästi käyttäytynyt] hölmö*
'An always selfishly behaved fool'

d. *[Aina muodikkaasti pukeutunut] ystäväni*
'An always fashionably dressed friend of mine'

e. *[Aina kovalla vauhdilla kulkenut] juna*
'An always fastmoving train'

f. *[Aina hyvällä maulla pukeutunut] nainen*
'An always with good tasted dressed woman'

g. *[Aina päin mäntyä menevät] asiat.*
'Things that always go wrong'

h. *[Aina kurin kanssa kasvatettu] lapsi*
'A child always brough up with discipline'

[67a-h] show, in turn, that the position of the manner adverbial cannot be a *higher* structural position either than the specifier of PcpP:

(67) a. **[Hyvin aina käyttäytynyt] oppilas*
'A well always behaved student'

b. **[Hyvin aina hoidettu] puutarha*
'Awell always cared for garden'

c. **[Itsekkäästi aina käyttäytynyt] hölmö*
'A selfishly always behaved fool'

d. **[Muodikkaasti aina pukeutunut] ystäväni*
'A fashionably always dressed friend of mine'

e. **[Kovalla vauhdilla aina kulkenut] juna*
'A fastmoving always train'

f. **[Hyvällä maulla aina pukeutunut] nainen*
'A with good taste always dressed woman'

g. **[Päin mäntyä aina menevät] asiat.*
'Things that always go wrong'

h. **[Kurin kanssa aina kasvatettu] lapsi*
'A child always brough up with discipline'

On the basis of [65] through [67], we must conclude that Finnish attributive PcpPs and true PcpPs do not have the same underlying structure. Another serious problem for these two types of PcpPs having the same underlying structure would be the fact that in attributive PcpPs, the manner adverbials are not allowed to remain in situ whereas in true PcpPs, they are not allowed to move:[14]

(68) a. **[Käyttäytynyt hyvin] oppilas*
Behave-2pcp-Nom well student-Nom

b. **[Kudottu käsin] villapusero*
Knit-pass-2pcp-Nom hand-pl-Instr sweater-Nom

c. **[Käyttäytynyt itsekkäästi] hölmö*
Behave-2pcp-Nom selfishly fool-Nom

d. **[Pukeutunut muodikkaasti] ystäväni*
Dress-2pcp-Nom fashionably friend-Nom-Px

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[14] A focussed reading would make (some of) the true PcpP constructions in [68] more acceptable.

e. **[Kulkenut kovalla vauhdilla] juna*
Move-2pcp great-Adess speed-Adess train-Nom

f. **[Pukeutunut hyvälla maulla] nainen*
Dress-2pcp-Nom good-Adess taste-Adess woman-Nom

g. **[Menneet päin mäntyä] asiat.*
Go-2pcp-pl to pine-Part thing-pl-Nom

h. **[Kasvatettu kurin kanssa] lapsi*
Bring up-pass-2pcp-Nom discipline-Acc with child-Nom

(69) a. *??Oppilas joka on hyvin käyttäytynyt.*
Student-Nom who be-pres-3sg well behave-2pcp

b. *??Villapusero joka on käsin kudottu.*
Sweater-Nom which be-pres-3sg hand-pl-Instr knit-pass-2pcp

c. **Hölmö joka on itsekkäästi käyttäytynyt.*
Fool-Nom that be-3sg selfish-Adv behave-2pcp

d. *??Ystäväni joka on muodikkaasti pukeutunut.*
Friend-Nom-Px that be-3sg fashionable-Adv dress-2pcp

e. **Juna joka on kovalla vauhdilla kulkenut.*
Train-Nom that be-pres-3sg great-Adess speed-Adess move-2pcp

f. *??Nainen joka on hyvällä maulla pukeutunut.*
Woman-Nom that be-3sg good-Adess taste-Adess dress-2pcp

g. **Asiat jotka o-vat päin mäntyä menneet.*
Thing-pl-Nom that to pine-Part go-2pcp

h. *??Lapsi joka on kurin kanssa kasvatettu.*
Child-Nom that be-3sg discipline-Gen with bring up-pass-2pcp

Based on the preceding considerations, I now concude that Finnish true PcpPs are projections within the clausal domain, and their structure is the one given in Diagram (6.10). However, Finnish attributive PcpPs are projections within the *subclausal* domain, and their structure seems to be similar to the structure of normal attributive AdjPs.

## 6.6. Conclusion

In this chapter, I determined the original position of merge of Finnish manner adverbials. I began by discussing obligatory and optional manner adverbials and

showed that they are treated in the same way by the computational system of language. As a result, they are merged into a unique Manner-related Spec/vP position, under semantic feature checking. This explains the similarities in their distribution and in their behaviour in operations such as extraction from islands and long Wh-movement. I then examined Finnish word order, anaphor binding, superiority effects and the behaviour of negative polarity items and concluded that manner adverbials are merged into a Spec/vP position which is lower down in the structure than Spec/AgrOP. I also showed that an analysis of manner adverbials as specifiers of a Manner-related light vP is not against the assumptions made within systems which treat manner adverbials as complements of the lexical V. In the last section, I looked at the behaviour of manner adverbials within the Finnish sub-clausal domain; I concluded that Finnish has two different participial constructions which have different structures.

## Chapter Seven

# Adverbials with Episodic, Habitual and Quality Predicates

In the previous chapter, I argued that Finnish manner, place and time adverbials are merged as specifiers of Manner-, Place- and Time-related light vPs, under semantic feature checking against the light v heads. In this chapter, I examine the behaviour of these adverbials in sentences containing episodic, habitual and quality predicates. In particular, I investigate if Finnish manner, place, and time adverbials are fully licensed by semantic feature checking alone, or if Diesing (1992), Chierchia (1995) and Kratzer (1995) are correct in arguing that place and time adverbials can be fully licensed only in constructions containing an extra Davidsonian argument for events and spatio-temporal location.

In Section 7.1. I discuss analyses of stage level and individual level predicates which are of relevance. In Section 7.2. I propose a distinction between episodic, habitual and quality predicates. I show, firstly, that all Finnish predicates can be used to refer to episodes, habits and qualities. I then sketch a minimalist analysis of different types of predicates, arguing that the ability of predicates to refer to episodes, habits and qualities is determined by the types of features that they contain, or are associated with, when they emerge from the numeration. These features are optional in the sense that their presence is determined by pragmatic considerations, ie by choices and intentions of speakers, when the predicate enters the numeration. In Section 7.3. I examine if these features are involved in the licensing of manner, place and time adverbials. I show that Finnish episodic, habitual and quality predicates are all able to select manner, place and time adverbials as their arguments; furthermore, all the adverbials are fully licensed by semantic feature checking alone, so that no further licensing conditions are needed.

# 7.1. The Puzzle

## 7.1.1. Carlson's Stage Level and Individual Level Predicates

The distinction between episodes, habits and qualities is based on the distinction between stage level and individual level predicates, going back to Milsark (1974) and Carlson (1977). Milsark differentiates between what he calls state-descriptive and property predicates, arguing that the former describe temporary states of individuals, the latter permanent properties of individuals. According to Milsark (1974, 212)

> properties are those facts about entities which are assumed to be, even if they are not in fact, permanent, unalterable, and in some sense possessed by the entity, while states are, at least in principle, transitory, not possessed by the entity of which they are predicated, and the removal of which causes no change in the essential qualities of the entity.

In Milsark's system, predicates are always purely state-descriptive or property predicates whereas according to Carlson (1977, 118ff.), predicates can receive a purely state-descriptive or property reading, or they can be *ambiguous* between a state-descriptive and a property reading. Carlson relabels state-descriptive and property predicates *stage level* and *individual level* predicates, respectively arguing that the former characterise stages of individuals whereas the latter are properties of individuals. He defines stages as spatio-temporally bounded manifestations of something or, as space-time slices of an individual, and argues that at any given place or time, there can be only one stage available for any given individual, for the sentence to be true or false of.[1]

Why do some predicates receive purely stage level or purely individual level interpretations while others can be seen as ambiguous between a stage level and an individual level interpretation? According to Carlson (1977, 273ff.) predicates come in two types: some, like those in [1a], characterise properties of stages while others, such as those in [1b], are "naturally properties of individuals." This can be seen as parallel to the view that nouns also come in two types - nouns such as *dog* and *cat* refer to objects which are countable (*one dog, two dogs...*), while nouns such as *water* and *gold* refer naturally to things which are uncountable (**one water, *two waters...*):

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[1] Carlson (1977) divides individuals further into objects and kinds. Objects correspond to a particular object such as *Bill* whereas kinds correspond to generic, kind-referring NPs such as *dogs*. As this distinction is not relevant for our purposes, I will not go into it here. For a discussion on objects and kinds, see Carlson (1977), Krifka et al (1995), Krifka (1995) and Wilkinson (1995).

(1) a. *be drunk, run, walk, sing arias, ...*
b. *be beautiful, be intelligent, know arias, ...*

Carlson (ibid.) proposes that all verbal predicates characterising properties of stages "can be made to apply to individuals (have generic readings)." He posits a generic operator G which is a function transforming stage level predicates into homophonic individual level predicates. G can operate on verbal predicates, but not on adjectival predicates: this means that verbal predicates can be ambiguous between receiving a stage level and an individual level interpretation, while adjectival predicates can only receive a purely stage level or individual level interpretation.[2] In Carlson's system, sentences such as [2a-b] are seen as being ambiguous between a stage level and an individual level interpretation:[3]

(2) a. *Bill ran.* (from Carlson 1977, 118)
b. *Dogs ran.* (from Carlson 1977, 125)

Considering the stage level reading of [2a] first, it refers to a particular event or situation in which Bill was engaged in running: Bill was engaged in running yesterday at three o'clock in front of his house. Carlson (1977, 128) argues that the predicate *run,* when it is used as a stage level predicate, denotes a set of running stages; the sentence *Bill run* is true iff one of Bill's stages is in that set (ie iff one of Bill's stages is a running stage). Turning now to the individual level reading of [2a], it refers to a particular property or characteristic that an individual named Bill used to have: Bill is the one who used to run habitually. When the predicate *run* is used as an individual level predicate, it denotes a set of individuals; the sentence *Bill run* is true iff Bill, rather than one of his stages, is in that set.

Various authors, including Diesing (1992), Kratzer (1995) and Krifka et al (1995), have pointed out problems with Carlson's analysis; in particular, because G is a monadic operator, his system fails to explain why some sentences can have more than one individual level interpretation. However, the problems that concern us here the most

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[2] More specifically, Carlson's generic operator G is a function turning (verbal) stage level predicates into object-level predicates and (verbal) object-level predicates into kind-level predicates. For more discussion, see Carlson (1977, Chapter 5) and Krifka et al (1995, 20ff.). In Sections 7.2. and 7.3. I will show that both adjectival and verbal predicates can be ambiguous between stage level and individual level interpretations; in other words, there is no such thing as a "purely" stage level or a "purely" individual level predicate.

[3] Note that [2a] and [2b] are analysed in the same way, despite the difference between the subjects *Bill* and *dogs*.

involve manner, place and time adverbials. Firstly, the relation between sentences such as [3a-c] and [4a-c] is problematic:[4]

(3) a. *Sirkku laulaa aarioita.*
'Sirkku sings arias'

b. *Sirkku laulaa aarioita suihkussa.*
'Sirkku sings arias in the shower'

c. *Sirkku laulaa aarioita keskiviikkona.*
'Sirkku sings arias on Wednesday'

(4) a. *Sirkku osaa aarioita.*
'Sirkku knows arias'

b. *#Sirkku osaa aarioita suihkussa.*
'Sirkku knows arias in the shower'

c. *#Sirkku osaa aarioita keskiviikkona.*
'Sirkku knows arias on Wednesday'

According to Carlson, *sing* is a predicate which applies to stages of individuals; because stages are space-time slices of individuals, stage level predicates can appear freely with place and time adverbials. But *know* is a predicate applying to individuals; because individual level predicates are "naturally properties of individuals" so that they must always hold of individuals in general, without being limited to a particular place or time, Carlson argues that they cannot appear freely with place and time adverbials. However, Carlson does not address the fact that, when the stage level predicate *sing* is transformed into the corresponding homophonic individual level predicate *sing,* by means of the generic operator G, it retains its ability to appear with place and time adverbials. In other words, while the stage level reading of [3b] picks out a particular stage of Sirkku which is both a "singing arias" stage and an "in the shower" stage, the individual level reading of [3b] expresses the idea that whenever there is a stage of Sirkku which is a "singing arias" stage, then that stage is also typically an "in the shower" stage. But the question that arises is this: if in [3b-c], the individual level predicate *sing* can appear freely with place and time adverbials, then why in [4bc-] cannot the individual level predicate *know* also appear equally freely with such adverbials?

A possible answer to this question could be that, because in [3b-c], the

[4] I use **#**, rather than *??*, to indicate that the sentences, rather than being ungrammatical, require a special facilitating context. In other words, I hypothesize that all that is wrong with such sentences is that they need a special facilitating context.

individual level reading is a quantification over stages which are allowed to have spatio-temporal boundaries whereas in [4b-c], it is a predication over an individual named Sirkku so that it must be true in general, without being limited to any particular place or time, [3b-c] can but [4b-c] cannot contain place and time adverbials freely. However, this line of reasoning cannot be maintained within Carlson's system. This is because Carlson (1977, 279ff.) argues that the truth of *all* individual level predicates, including *know*, is dependent, in one way or another, on stages of individuals. This means, then, that the individual level interpretations of both [3b-c] and [4b-c] must presuppose the existence of stages of individuals, so that **(A)** predicates which quantify over such stages of individuals and **(B)** predicates which predicate over individuals must presuppose the existence of stages of individuals, ie the existence of spatio-temporally bounded manifestations of something. But this leads us back to our original question: why can some individual level predicates appear freely with place and time adverbials while others cannot?

Another issue which concerns us here is the interpretation of manner adverbials in sentences like [5a-b]:

(5) a. *Sirkku laulaa aarioita hyvin.*
'Sirkku sings arias well

b. *Sirkku laulaa aarioita hyvin suihkussa/ keskiviikkona.*
'Sirkku sings arias well in the shower/ on Wednesday'

Both [5a] and [5b] are ambiguous between a stage level and an individual level reading; this is because *sing* is a stage level predicate which can be turned into an individual level predicate, by means of the generic operator G. But in [5b], even though the sentence as a whole can receive an individual level interpretation, the V+manner adverbial part, ie the *sing arias well* part, can only receive a stage level reading. In other words, even though in [5a], *sing arias well* can be treated as a permanent property or habit which is predicated of Sirkku, in [5b] it cannot. Although one could come up with an analysis according to which this is due to the quantificational treatment of habitual sentences so that the individual level reading of [5b] is really a quantification over stages which are simultaneously "sing arias well" and "in the shower" or "on Wednesday" stages, one might wonder why it is not possible to quantify over properties of individuals in the same way, so that an individual level interpretation of a sentence would consist of "more primitive" individual level properties.

## 7.1.2. Krifka et al's Episodic, Habitual Generic and Lexical Generic Predicates

In this sub-section, I show that the issues which are problematic for Carlson's analysis also arise in some other analyses of stage level and individual level predicates. Krifka et al (1995) make a three-way distinction between episodic, habitual generic, and lexical generic predicates. Their episodic predicates correspond to Carlson's stage level predicates in that they pick out particular spatio-temporally bounded events or situations. The habitual generic and lexical generic predicates correspond to Carlson's individual level predicates: while habitual generics express generalizations over episodic events, lexical generics refer to fundamental, characterising properties of individuals.

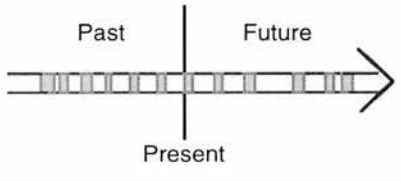
Krifka et al argue that habitual generic predicates and episodic predicates are related, in the sense that a habitual generic predicate must always have a corresponding homophonic episodic predicate referring to episodic events. This means that sentences like [6a-c] can express generalizations over a large number of events in which Sirkku is engaged in walking, smoking, or singing arias or, alternatively, they can refer to a single event or situation in which Sirkku is engaged in these activities:

(6) a. *Sirkku kävelee.*
'Sirkku walks'

b. *Sirkku tupakoi.*
'Sirkku smokes'

c. *Sirkku laulaa aarioita.*
'Sirkku sings arias'

According to Krifka et al, the truth of habitual generic sentences is determined by the existence of a large number of episodic events in which the individual is engaged in the activity described by the predicate. In the following diagram, each grey area corresponds to an episodic event in which Sirkku is engaged in walking, smoking or singing arias. The diagram illustrates the way in which habitual generics generalize over episodic events - although episodic events must always occur in a particular place at a particular time, habitual generic sentences are true in general, lacking exact spatio-temporal locations:



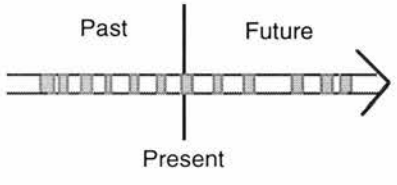
Unlike habitual generic sentences, Krifka et al argue that the predicates of *lexical* generic sentences, like those in [7a-c], do not have any corresponding homophonic episodic predicates:[5]

(7) a. *Sirkku osaa ranskaa.*
'Sirkku knows French'

b. *Sirkku rakastaa Kevin Costneria.*
'Sirkku loves Kevin Costner'

c. *Sirkku pelkää kuolemaa.*
'Sirkku fears death'

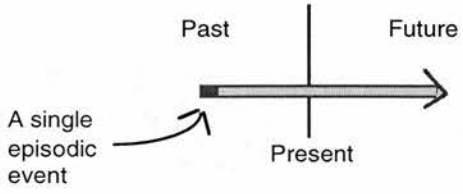
At first, Krifka et al (1995, 17ff.) assume that only habitual generics can express generalizations over episodic events; lexical generics, on the other and, are "inherently generic" and "lexically stative," referring to fundamental characterising properties of individuals. But later on they adopt, much in line with Carlson, the view that even lexical generics can express generalizations over episodic events or happenings. So, although the predicates of lexical generic sentences such as *Sirkku knows French* lack corresponding episodic predicates, Krifka et al (1995, 37ff.) argue that there nevertheless exist episodic events or situations which can be described as instances of knowing French and which count as evidence for the truth of the lexical generic sentence. Such instances include "speaking French, or listening to French and acting in an appropriate way." Furthermore, following Ryan (1949), Krifka et al (ibid.) argue that because there can be "so many different ways to show a given behavior (so many different ways to show 'knowing French behavior,' for instance), there can be no single episodic verb to denote them all." In the following diagram, each grey area corresponds to a specific, spatio-temporally bounded event or situation in which Sirkku is showing knowing French, loving Kevin Costner, or fearing death behaviour:




But according to Krifka et al (1995, 36), not all lexical generic sentences express a generalization over episodic events. Sentences like *Sirkku is married* and

[5] This suggests that Krifka et al's distinction between habitual and lexical generics is parallel to Carlson's distinction between individual level predicates which have been derived from stage level predicates by means of the generic operator G, and individual level predicates which are "naturally" properties of individuals.

*Sirkku is thirty years old* would be treated as lexical generics within their system, despite the fact that they do not express a generalization over episodic events or situations in which Sirkku shows a particular kind of behaviour or in which she has a particular property. Instead, Krifka et al argue, the truth of such sentences is related to the occurrence of a single episodic event such as a wedding or birth:[6]




However, Krifka et al's proposal that both habitual and lexical generic sentences express generalizations over episodic events or situations is problematic and calls for comments. Firstly, it seems to leave the following types of sentences without a satisfactory analysis:

(8) a. *Sirkku on kaunis.*
'Sirkku is beautiful'

b. *Sirkku on sinisilmäinen.*
'Sirkku is blue-eyed (ie has blue eyes)'

The truth of [8a-b] is not based on the existence of (a single or a number of) episodic event(s) or situation(s) in which Sirkku is showing a particular kind of behaviour, or in which she receives a particular property. Rather, it is based on the existence of certain requirements or conditions: *Sirkku is beautiful* is true iff Sirkku's outer appearance satisfies our and the speaker's requirements for beauty. Instead of expressing a true generalization, it seems rather that the sentences in [8a-b] merely state that Sirkku has a particular characterising property or quality.

Secondly, a system which assumes that both habitual generic and lexical generic sentences express generalizations over episodic events or situations fails to explain why habitual generics can contain place and time adverbials relatively freely, but lexical generics cannot. After all, if the truth of both habitual generics and lexical generics is based on the existence of episodic events or situations ***s*** such that an individual shows a particular kind of behaviour or has a particular property in ***s***, then one would expect ***s*** to be able to have an overt realisation and to receive a value in both habitual generics and

[6] In their discussion of *be married* and *be 30 years old,* Krifka et al overlook the fact that the state following the single episodic event is rather different: after getting married, one usually stays married for a considerably long time. But one does not stay 30 years old for a very long time.

lexical generics. But the examples in [3b-c] and [4b-c], repeated here as [9a-b] and [10a-b], show that this is not what happens. While the habituals in [9a-b] can express a generalization over episodic events ***s*** such that Sirkku sings arias in ***s*** and ***s*** has the overt realisation *in the shower*, the lexical generics in [10a-b] cannot express a generalization over episodic events ***s*** such that Sirkku shows knowing arias behaviour in ***s*** and ***s*** has the overt realisation *in the shower,* unless there is a special facilitating context to support this reading:

(9) a. *Sirkku laulaa aarioita suihkussa.*
'Sirkku sings arias in the shower'

b. *Sirkku laulaa aarioita keskiviikkoisin.*
'Sirkku sings arias on Wednesdays'

(10) a. *#Sirkku osaa aarioita suihkussa.*
'Sirkku knows arias in the shower'

b. *#Sirkku osaa aarioita keskiviikkoisin.*
'Sirkku knows arias on Wednesdays'

Thirdly, like Carlson's system, Krifka et al's system fails to explain why in [5a], repeated here as [11a], the V+manner adverbial part, that is, the *sing arias well* part, can receive a habitual (or even a lexical) generic reading whereas in [11b], even though the sentence *as a whole* can receive a habitual (or a lexical) generic reading, the V+manner adverbial part can only receive an episodic event reading. In other words, why cannot a habitual or a lexical generic reading of a sentence consist of a number of smaller, "more primitive" habits or qualities?

(11) a. *Sirkku laulaa aarioita hyvin.*
'Sirkku sings arias well

b. *Sirkku laulaa aarioita hyvin suihkussa/keskiviikkona.*
'Sirkku sings arias well in the shower/on Wednesday'

### 7.1.3. Diesing (1992) and Kratzer (1995)

The behaviour of place and time adverbials with stage level and individual level predicates or, to use Krifka et al's terminology, with episodic, habitual, and lexical generic predicates, is also discussed in Diesing (1992) and Kratzer (1995). Both Diesing and Kratzer argue that stage level and individual level predicates, rather than characterising properties of different types of entities (ie properties of stages and

individuals, respectively), differ in argument structure. In particular, they hypothesize that stage level predicates, but not individual level predicates, have an extra Davidsonian argument for events and spatio-temporal location. Crucially, they relate the presence of this extra Davidsonian argument to the licensing of place and time adverbials, in the sense that stage level predicates, because they have it, can appear freely with place and time adverbials but individual level predicates, because they do *not* have it, cannot. The Davidsonian argument is a variable, and the place and time adverbials quantify over it - thus, individual level predicates, because they do not have this argument/variable, cannot appear with place and time adverbials: as there is nothing in the sentence for the adverbials to quantify over, they would violate the prohibition against vacuous quantification.

However, Diesing and Kratzer point out that sentences like [10a-b] are not always ungrammatical, in the sense that they would involve a violation of the prohibition against vacuous quantification. Instead, Diesing and Kratzer argue that the sentences can be grammatical but sound odd because an individual level predicate is being used as a stage level predicate. Unfortunately, they do not discuss in any detail how an individual level predicate can be transformed into a homophonic stage level predicate.

### 7.1.4. A Proposal

In the previous sub-sections, we have seen that Carlson's stage level predicates and Krifka et al's episodic predicates can have corresponding homophonic individual level predicates/habitual generic predicates. We have also seen that such predicates can appear freely with place and time adverbials. But there also exists another type of individual level predicate, *know*, *love,* and *fear* being a case in point. Even though Carlson and Krifka et al argue that such predicates lack corresponding homophonic stage level predicates, they assume that they must nevertheless have their truth determined by events or situations (ie by stages) which are spatio-temporally bound. But under this line of reasoning, it is unclear why such predicates cannot appear freely with place and time adverbials:

| | | |
|---|---|---|
| Ind.level predicate **A** (eg *run, sing arias*) | - has a homophonic stage level predicate | - is dependent on stages of individuals |
| Ind. level predicate **B** (eg *know arias*) | - *lacks* a homophonic stage level predicate | - is dependent on stages of individuals |

Diesing and Kratzer assume that even type **B** predicates can be used to refer to episodic

events or situations (ie to stages) - in other words, they adopt the view that such predicates *do* have corresponding homophonic stage level predicates:

| | | |
|---|---|---|
| Ind.level predicate **A** (eg *run, sing arias*) | - has a homophonic stage level predicate | - is dependent on stages of individuals |
| Ind. level predicate **B** (eg *know arias*) | - has a homophonic stage level predicate (which can only be used when there is a context to support it) | - is dependent on stages of individuals |

On the basis of these considerations, it now seems that there are (at least) two different types of individual level predicates, both of which have corresponding homophonic stage level predicates. However, while individual predicates belonging to category **A** can function equally naturally as both individual level and stage level predicates, those belonging to category **B** prefer the individual level interpretations. They can function as stage level predicates only when there is a special context to support this analysis. Conversely, it seems that some predicates prefer the stage level interpretation, so that they can function as (type **A** or type **B**) individual level predicates only when there is a special facilitating context. In the following sections, I will try to sketch an analysis according to which all predicates are ambiguous, in one way or another, between a stage level and an individual level interpretation; this means that all stage level predicates can have corresponding homophonic (type **A** and type **B**) individual level predicates, and vice versa. This does *not* mean, however, that the conversion between stage level and individual level predicates is always equally easy; I am assuming that, although some predicates will be equally natural with both stage level and individual level interpretations, some will always prefer the stage level interpretation, just as others will prefer the (type **B**) individual level interpretation. In Section 7.2. I will examine the behaviour of different types of Finnish predicates, in order to show that all stage level predicates can indeed have corresponding homophonic (type **A** and type **B**) individual level predicates, and vice versa.

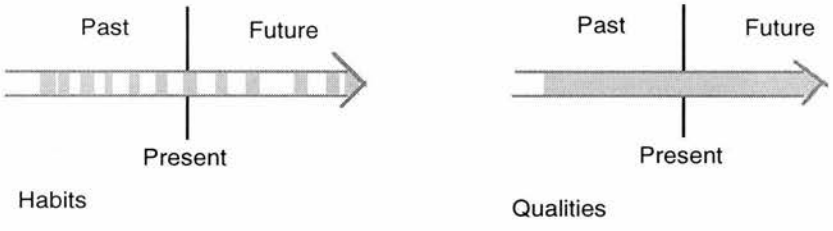
# 7.2. Episodes, Habits and Qualities

## 7.2.1. Preliminaries

In this sub-section, I propose a distinction between episodes, habits, and qualities.

Considering episodes first, I argue that they correspond to Carlson's stage level properties and to Krifka et al's episodic events, in that they are situations or occurrences which take place in a particular place at a particular time. An episodic reading of *Sirkku sings arias in the shower* refers to a particular one-off incident which involves Sirkku singing arias in the shower; for example, Sirkku sings arias in the shower on December 24th 1998 at 5.55pm.

Turning now to habits, they consist of repeated episodes. If Sirkku sings arias most times when she is taking a shower, we can assume that singing arias in the shower is a habit that Sirkku has. So, instead of referring to a particular one-off incident, the habitual reading of *Sirkku sings arias in the shower* refers to the tendency that Sirkku has to perform a certain action, ie to sing arias in the shower. Finally, qualities are things which make an individual what she or he is: qualities correspond to Milsark's properties (cf. Section 7.1.) in being facts about individuals "which are assumed to be, even if they are not in fact, permanent, unalterable, and in some sense possessed by the entity..." I hypothesize that habits always presuppose the existence of recurring episodes, but qualities do not. For example, while the habitual reading of the sentence *Sirkku sings arias in the shower* presupposes the existence of recurring "sing arias in the shower" episodes, the quality reading of the same sentence merely expresses the idea that Sirkku has a certain characterising property, a certain quality, which is to sing arias in the shower. This quality is interpreted much in the same way as having blond hair and a wooden leg are. We can try to describe the difference between habits and qualities in the following way:




While both habits and qualities are long-lasting states, habits are made up of a large number of recurring episodes in which the individual is involved in the activity or in which she has the property described by the predicate. Furthermore, habits allow for the existence of episodes in which the individual is *not* involved in the action or in which she does *not* have the property described by the predicate. But qualities consist of just one long-lasting, continuous "episode." As a result, they cannot allow for the existence of episodes in which the individual does *not* have the property described by the predicate; in other words, because we are concerned with just one, albeit a very stable and long-lasting, "episode," the individual cannot at the same time both have and

not have the property illustrated by the predicate.[7]

The difference between episodes, habits and qualities can best be described by taking a very concrete example. In Goscinny and Uderzo's Asterix-cartoons the Gauls have a magic potion which, after they drink it, makes them strong for a short period of time. A sentence such as *Asterix is strong* can be used to describe a single episode in which a character called Asterix is strong after having drunk some magic potion; this is the episodic reading. Alternatively, *Asterix is strong* can be used to describe the tendency that Asterix has of being strong after having drunk some magic potion; this is the habitual reading. But a character called Obelix fell into a pot full of magic potion when he was a boy, and this caused him to become strong for the rest of his life, without having to drink any magic potion at all. The sentence *Asterix is strong* differs from the sentence *Obelix is strong* in that the former treats being strong as a temporary (the episodic reading), or alternatively as a recurring (the habitual reading), property; but the latter refers to a quality which distinguishes Obelix from all other Gauls (the quality reading). Note also that the habitual reading of *Asterix is strong* allows for the existence of episodes in which Asterix is *not* strong, but the quality reading of *Obelix is strong* does not allow Obelix to change back and forth between being strong and not being strong.

### 7.2.2. Episodic, Habitual and Quality Readings are Available to All Finnish Predicates

In the previous sub-section, I proposed a distinction between episodic, habitual and quality predicates. In this sub-section, I show that episodic, habitual and quality readings are available to all Finnish predicates. I also show that particular types of predicates can prefer particular readings, so that the other readings are only available when there is a special facilitating context to support them.

Let us begin by considering sentences such as [12a-c] - in Milsark (1974) and Carlson (1977), these sentences would be treated as containing purely stage level predicates:

(12) a. *Sirkku on humalainen.*
'Sirkku is drunk'

---

[7] It also seems that habits are based on something that an individual *does*, and qualities are based on what an individual *is like.*

b. *Sirkku on flunssainen.*
'Sirkku is sick with flu'

c. *Sirkku on vihainen.*
'Sirkku is angry'

[12a-c] are typically interpreted as referring to particular episodes in which Sirkku is drunk, sick with flu or angry: Sirkku is drunk on January 22 at 9am in the nearest whisky distillery. The availability of the episodic readings is supported by the fact that [12a-c] can function as complements of perception verbs:[8]

(13) a. *Pulmu näkee [Sirkun olevan humalainen].*
'Pulmu sees that Sirkku is drunk'

b. *Pulmu näkee [Sirkun olevan flunssainen].*
'Pulmu sees that Sirkku is sick with the flu'

c. *Pulmu näkee [Sirkun olevan vihainen].*
'Pulmu sees that Sirkku is angry'

Note that the adjectival predicates in [12a-c] can also have nominal counterparts in Finnish:[9]

(14) a. *Sirkku on humalassa.*
'Sirkku is drunk'

---

[8] This is because episodics are seen as being aspectually dynamic whereas habits and qualities are aspectually stative; hence, episodics can, but habits and qualities cannot, appear in linguistic forms which exclude statives, the complement of a perception verb being a case in point. The aspectual classes of predicates are discussed in more detail Vendler (1967) and Comrie (1976), among many others. For more discussion on the Finnish aspectual system, see Heinämäki (1984), Kangasmaa-Minn (1984), Hakulinen & Karlsson (1979, 183ff.; 245ff.; 381ff.) and Vilkuna (1996, 102f.; 120ff.).

[9] The nominal predicates of [14] inflect for the Inessive case. This implies that the individual is somehow located or situated inside the state described by the predicate. It is interesting to see that many "ordinary" states are also often formed by means of the Inessive case:

(i) *Leijona o-n häki-ssä.*
Lion-sg-Nom be-pres-3sg cage-sg-Iness
'The lion is in the cage'

(ii) *Sirkku o-n Lapi-ssa.*
Sirkku-Nom be-pres-3sg Lapland-Iness
'Sirkku is in Lapland'

Huumo (1997, 212) argues that sentences such as [14] involve internally bound spaces: they are internal states of an individual and are conceptually dependent on the individual which is situated inside of them.

b. *Sirkku on flunssassa.*
'Sirkku is sick with flu'

c. *Sirkku on raivon tilassa.*
'Sirkku is in a state of rage'

However, although both [12] and [14] are typically interpreted as referring to episodes, the habitual and quality readings are also available. While the episodic readings of [12] and [14] refer to a single, one-off episode in which Sirkku is drunk, sick with flu, or in a state of rage, the *habitual* readings refer to a habit or a *tendency* that Sirkku has of being drunk, sick with flu or in a state of rage; they express a generalization over a large number of recurring episodes in which Sirkku is drunk, sick with flu or in a state of rage. Interestingly, the habitual readings are the only readings available when the sentences also contain an adverbial such as *yleensä* 'usually'. That the episodic event readings are not available is shown by the fact that sentences such as [15a-c] cannot function as complements of perception verbs:

(15) a. *Sirkku on yleensä humalassa.*
'Sirkku is usually drunk'

b. *Sirkku on yleensä flunssassa.*
'Sirkku is usually sick with flu'

c. *Sirkku on yleensä raivon tilassa.*
'Sirkku is usually in a state of rage'

(16) a. **Pulmu näkee [Sirkun olevan yleensä humalassa].*
'Pulmu sees Sirkku be usually drunk'

b. **Pulmu näkee [Sirkun olevan yleensä flunssassa].*
'Pulmu sees Sirkku be usually sick with flu'

c. **Pulmu näkee [Sirkun olevan yleensä raivon tilassa].*
'Pulmu sees Sirkku be usually in a state of rage'

Besides episodes and habits, [12] and [14] can refer to qualities of individuals. This is where pragmatic considerations become relevant. When *be drunk* is used as a quality predicate, the sentence *Sirkku is drunk* expresses the idea that being drunk is a stable, long-lasting property; it does not allow Sirkku to change back and forth between having and not having this property.[10] However, in the normal world, drunkenness is

[10] The quality reading of *Sirkku is drunk* is, in fact, very similar to the quality reading of *Sirkku is a drunk.* But note that the quality reading of *Sirkku is drunk* requires Sirkku's blood alcohol level to be beyond a certain limit 24 hours a day 7 days
(continued ⇒)

not interpreted in this way: the quality reading of *Sirkku is drunk* is not a very natural one and requires the presence of a special facilitating context. But just because something is not very natural and requires the presence of a special facilitating context does not automatically mean that it is ungrammatical. The quality reading of *be drunk* is more obvious in [17a] below - sentences such as [17b-c] in which we are forced to interpret drunkenness episodically and habitually are odd (in the sense that this time *they* require the presence of a special facilitating context):

(17) a. *Sirkku on syntymähumalassa.*
'Sirkku is born drunk' (lit. birth-drunk - this expression is used in Finnish to describe a kind of positive, enthusiastic attitude to life)

b. *#Pulmu näkee [Sirkun olevan syntymähumalassa].*
'Pulmu sees Sirkku born drunk'

c. *#Sirkku on yleensä syntymähumalassa.*
'Sirkku is usually born drunk'

On the basis of the preceding discussion, we must conclude that predicates such as *be drunk* can be ambiguous between an episodic, habitual and quality reading; the availability of a particular reading is subject to pragmatic considerations. Let us now move on to consider predicates such as *be beautiful* and *love Kevin Costner;* in Milsark's and Carlson's systems, these would be analysed as predicates which apply directly to individuals:

(18) a. *Sirkku on kaunis.*
'Sirkku is beautiful'

b. *Sirkku on älykäs.*
'Sirkku is intelligent'

c. *Sirkku on kuollut.*
'Sirkku is dead'

(19) a. *Sirkku rakastaa Kevin Costneria.*
'Sirkku loves Kevin Costner'

b. *Sirkku osaa aarioita.*
'Sirkku knows arias

c. *Sirkku tuntee monta lintulajia.*
'Sirkku knows many species of bird'

---

a week, while the quality reading of *Sirkku is a drunk* is true even if Sirkku is sometimes sober.

Unlike in [12a-c], the adjectival predicates in [18a-c] do not have nominal counterparts in Finnish:[11]

(20) a. **Sirkku on kauneudessa.*
'Sirkku is in beauty'

b. **Sirkku on älyssä.*
'Sirkku is in intelligence'

c. **Sirkku on kuolemassa.*
'Sirkku is in death'

[18a-c] and [19a-c] are typically interpreted as containing quality predicates. The quality reading of the sentence *Sirkku is beautiful* expresses the idea that Sirkku's being beautiful is a stable, long-lasting property or quality so that Sirkku cannot change back and forth between having and not having this quality; rather, she must have it continuously, for an indefinitely long period of time. In the normal world, being beautiful is interpreted in this way: hence, the quality reading of *Sirkku is beautiful* is a natural one.

However, the episodic and habitual readings are also available for [18a-c] and [19a-c], albeit this time *they* are subject to pragmatic considerations and require the presence of particular facilitating contexts. Considering the episodic readings of [18] and [19] first, they pick out a particular episodic event in which Sirkku is beautiful or loves Kevin Costner. Being beautiful and loving Kevin Costner are temporary properties which hold of Sirkku only in a particular place and/or at a particular time. Because in the normal world, being beautiful and loving someone are *not* interpreted in this way, the episodic readings always involve setting up a special context of some kind. But as soon as the special context is given, the episodic readings are perfectly acceptable. For example, in [18a], we can imagine a situation in which Sirkku is an actress and happens to be on stage. Pulmu, watching Sirkku, notices that although Sirkku is normally a horrid-looking woman, something makes her glow on stage so that she is all of a sudden looking very beautiful. And in [19a], we can imagine a situation in which Sirkku gets amorous feelings for Kevin Costner as soon as she enters the shower cubicle but when she stops taking her shower, she decides that Kevin Costner is not such an astonishing character after all. Or else we can interpret the predicate *love Kevin Costner* in a different way and imagine that Sirkku and Kevin

[11] If the Inessive case implies that the individual is located or situated inside the state described by the predicate, then the ungrammaticality of [20a-c] could suggest that being beautiful is not normally interpreted as a kind of state within which an individual can be located.

Costner are committing a physical act of love in the shower cubicle. The availability of the episodic readings is supported by the fact that, once a suitable context is established, both [18a] and [19a] are able to function as complements of perception verbs:

(21) a. *#Pulmu näkee [Sirkun olevan kaunis].*
'Pulmu sees Sirkku be beautiful'

b. *Pulmu näkee [Sirkun olevan kaunis (näyttämöllä)].*
'Pulmu sees Sirkku be beautiful (on stage)'

c. *#Pulmu näkee [Sirkun rakastavan Kevin Costneria].*
'Pulmu sees Sirkku love Kevin Costner'

d. *Pulmu näkee [Sirkun rakastavan Kevin Costneria (suihkussa)].*
'Pulmu sees Sirkku love Kevin Costner (in the shower)'

Turning now to the habitual readings of [18a-c] and [19a-c], they are based on the episodic event readings: they refer to a tendency that Sirkku has of being beautiful, or of loving Kevin Costner. They also imply that Sirkku is able to change back and forth between being beautiful and not being beautiful, and between loving and not loving Kevin Costner. The habitual readings are again the only readings available when the sentences contain an adverbial such as *yleensä* 'usually'. This observation is supported by the grammaticality of [22a-b] and the ungrammaticality of [23a-b]:[12]

(22) a. *Sirkku on yleensä kaunis.*
'Sirkku is usually beautiful.

b. *Sirkku rakastaa yleensä Kevin Costneria.*
'Sirkku loves usually Kevin Costner'

(23) a. **Pulmu näkee [Sirkun olevan yleensä kaunis].*
'Pulmu sees that Sirkku is usually beauitiful'

b. **Pulmu näkee [Sirkun rakastavan yleensä Kevin Costneria].*
'Pulmu sees that Sirkku usually loves Kevin Costner'

Based on the preceding discussion, we can conclude that predicates such as *be drunk, be beautiful,* and *love Kevin Costner* can be used to refer to episodes, habits and qualities. While predicates such as *be drunk* are most natural when referring to episodes or habits, predicates such as *be beautiful* and *love Kevin Costner* are most

[12] The quality readings are not possible in [22a-b] and [23a-b] because adverbials such as *yleensä* 'usually' explicitly convey the information that there are also exceptions. In [22a] we can imagine that the sentence continues *...but today she has a black eye which makes her look absolutely horrid* while in [22b] it continues *...but today she is a bit bored with him and has decided to love Mel Gibson instead.*

natural when referring to qualities. But as we have seen, the other readings cannot be excluded either; however, their availability is usually subject to pragmatic considerations. But there exists also a third group of predicates. Members of this group are equally natural with any reading; no special context is needed for the episodic, habitual or quality readings of sentences such as [24a-c]. In Carlson's system, the predicates of these sentences would be treated as being ambiguous between stage level and individual level interpretations:

(24) a. *Sirkku kävelee.*
'Sirkku walks'

b. *Sirkku tupakoi.*
'Sirkku smokes'

c. *Sirkku laulaa aarioita.*
'Sirkku sings arias'

Firstly, [24a-c] can describe a particular one-off episode in which Sirkku is engaged in walking, smoking or singing arias: Sirkku is walking right here and now, or smoking right there and then. The availability of the episodic readings is revealed by the fact that [24a-c] can function as complements of perception verbs:

(25) a. *Pulmu näkee [Sirkun kävelevän].*
'Pulmu sees Sirkku walk'

b. *Pulmu näkee [Sirkun tupakoivan].*
'Pulmu sees Sirkku smoke'

c. *Pulmu kuulee [Sirkun laulavan aarioita].*
'Pulmu hears Sirkku sing arias'

Secondly, [24a-c] can also express the idea that Sirkku has a tendency to walk, smoke or sing arias habitually, generalizing over a number of recurring episodes in which Sirkku is engaged in these activities. The habitual readings are again the only readings available when the sentences contain an adverbial such as *yleensä* 'usually':

(26) a. *Sirkku kävelee yleensä.*
'Sirkku walks usually'

b. *Sirkku tupakoi yleensä.*
'Sirkku smokes usually'

c. *Sirkku laulaa yleensä aarioita.*
'Sirkku sings usually arias'

Finally, [24a-c] can refer to qualities of individuals: the quality readings of [24a-c] are close to the quality readings of sentences such as *Sirkku is a walker, Sirkku is a smoker* and *Sirkku is an aria singer* (whatever that is), in the sense that they are interpreted as referring to stable, long-lasting characterising properties or qualities of individuals.

### 7.2.3. A Minimalist Account of Episodes, Habits and Qualities

In the previous sub-section, we have seen that all Finnish predicates can be used to refer to episodes, habits and qualities. In this sub-section, I sketch a minimalist account of Finnish episodic, habitual and quality predicates. The aim is to show that the episodic/habitual/quality reading of the sentence can be determined by the types of features contained in its main predicate.

Let us begin by distinguishing episodes and habits from qualities. As we have seen in the preceding sub-sections, both episodes and habits presuppose the existence of events or situations in which an individual is showing a particular kind of behaviour or in which she has a particular property. Qualities, on the other hand, do *not* presuppose the existence of such events or situations. I now hypothesize that the difference between episodes and habits, on the one hand, and qualities, on the other hand, corresponds to the presence or absence of a special feature which I will call an [Event] feature, on the predicate. I also propose that the presence or absence of the feature [Event] on the predicate is due to *pragmatic* considerations, that is, to choices and intentions of speakers, and is determined, for each occurrence of the predicate, when it enters the numeration - in this sense, [Event] is always an optional feature. Because the same predicates with different optional features are treated as distinct members of the numeration, homophonic episodic, habitual and quality predicates can be treated as distinct members of the numeration. In other words, episodic and habitual predicates are specified [Event], while quality predicates are unspecified for this feature, when they emerge from the numeration and enter the derivation:[13]

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[13] Alternatively, we could assume that episodic and habitual predicates are specified [+Event] while quality predicates are specified [-Event], when they emerge from the numeration - I will consider this option briefly. Note that the system developed here is based on the idea that the presence of the feature [Event] is determined, for each occurrence of the predicate, when the predicate enters the numeration. It has also been argued, eg by Marantz (1997), that eventiveness is associated with a light v projection in between a root "verb" and the lexical V, so that the light v makes the root eventive. But this is a slightly different use of the term *Event*, however.

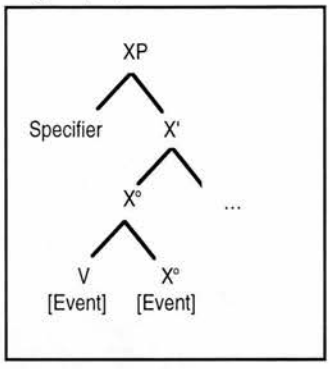
Table (7.1.)

| *Predicate* | *Episodic use* | *Habitual use* | *Quality* |
|---|---|---|---|
| *be drunk* | [Event] | [Event] | – |
| *be beautiful* | [Event] | [Event] | – |
| *love K.C.* | [Event] | [Event] | – |
| *know arias* | [Event] | [Event] | – |
| *walk* | [Event] | [Event] | – |
| *smoke* | [Event] | [Event] | – |
| *sing arias* | [Event] | [Event] | – |

But what properties does the [Event] feature have? In particular, is it a *lexical* feature so that it needs no checking in the syntax, or is it a *syntactic* feature so that is must always be checked in an appropriate functional or light v projection, by virtue of overt or covert head-to-head movement and adjunction of the predicate to the head of this functional or light v projection? If [Event] is a lexical feature, then, given the theory of phrase structure developed in the previous chapters of this thesis, it cannot be associated with a functional or a light v projection so that it would drive the movement of the predicate to this projection. And because it is not associated with a functional or a light v projection, it can play no role in the licensing of adverbials, or in the licensing of arguments of V. If, on the other hand, [Event] is a *syntactic* feature, then the derivation must contain a special Event-related functional or light v projection; the [Event] feature is then checked by means of movement and adjunction of the lexical V to the head of this functional or light v projection, in a manner illustrated in Diagram (7.1):[14]

[14] If [Event] is a syntactic feature and has no values [±Event], then derivations containing eventive (ie episodic and habitual) verbal predicates must have Event-related functional or light v projections whereas derivations containing non-eventive (ie quality) verbal predicates must lack such projections. If, on the other hand, eventive predicates are specified [+Event] while non-eventive predicates are specified [-Event], the derivation must always contain an appropriately specified Event-related functional or light v projection.

Diagram (7.1)




Given the theory of phrase structure developed in the previous chapters of this thesis, the question that arises is this: what types of elements can be merged as specifiers of Event-related functional or light v projections, under semantic feature checking? If $X^0$ corresponds to a functional head, then, on the assumption that only adverbials can be merged as specifiers of functional heads, we need to determine what types of adverbials can only appear with eventive (ie with episodic and habitual) predicates, but not with non-eventive (ie quality) predicates. If, on the other hand, $X^0$ corresponds to a light v head, then, given the assumption that only arguments of V can be merged as specifiers of light v heads, we need to determine what types of arguments can only appear eventive predicates. In Section 7.3. I will examine if Finnish manner, place and time adverbials are arguments which can appear with eventive predicates.

In the discussion so far, we have distinguished between episodic/habitual and quality predicates. Turning now to the distinction between episodes and habits, I assume, much in line with Chierchia (1995) and Cinque (1997), that predicates can also be associated with an aspectual habitual feature (ie they can be [±Habitual]) when they emerge from the numeration. Just like the other aspectual features, I assume that [±Habitual] is a syntactic feature - this means that it must be checked by means of movement and adjunction of the predicate to an appropriate clausal aspectual functional projection. The presence of an aspectual habitual morpheme and feature on the predicate is supported by languages such as Basque and Yareba (a non-Austronesian language spoken in Papua-New Guinea); in these languages, habitual predicates have, but episodic and quality predicates have not, a phonologically overt aspectual habitual morpheme:

(27) a. *eda-n <u>ohi</u> du* — *Basque*
drink-Pref Hab Aux.agr — (from Cinque 1997, 116)
''He usually drinks'

b. *yau-r-edib-eb-a-su* — *Yareba*
sit-CM-Freq-Hab-Pres-3sgMasc — (from Cinque 1997, 155)
'He (habitually and repeatedly) sits down'

I propose that Finnish differs from Basque and Yareba in that its predicates have a phonologically zero aspectual habitual morpheme, rather than a phonologically overt one, which is associated with an aspectual feature which needs checking, by virtue of head-to-head movement of the predicate (or its features) to the appropriate clausal aspectual functional projection.

The presence of an aspectual habitual functional projection in the derivation allows us to explain why the habitual reading is the only reading available for sentences containing adverbials like *yleensä/usually* (see the discussion on sentences such as [15], [22] and [26]). In keeping with Cinque (1997, 116; 155; 178) I assume that such adverbials are inherently [+Habitual]: this means that they can only be merged as specifiers of [+Habitual] functional heads, under semantic feature checking between the adverbials and the functional heads. Because habitual sentences have a [+Habitual] functional head, they can contain adverbials such as *yleensä/usually;* this is illustrated in Diagram (7.2) below. However, because episodics and qualities have a [-Habitual] functional head, they can never contain such adverbials; Diagram (7.3) shows how episodics and qualitites involve a mismatch of features:[15]

Diagram (7.2)

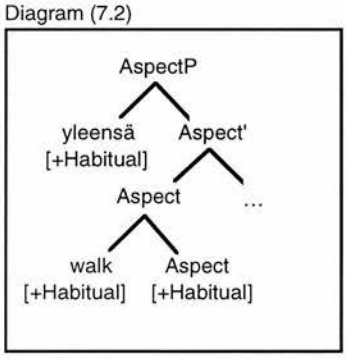
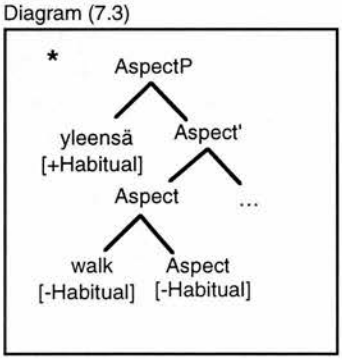



Diagram (7.3)




So, summarising the discussion so far, I hypothesize that episodic, habitual and quality predicates are associated with the following types of features when they emerge from the numeration:

Table (7.2)

[15] As we have seen in the previous chapters, the raising element is at this point a complex v or a complex functional head containing the lexical V, rather than just the lexical V itself.

| *Predicate* | *Episodic use* | *Habitual use* | *Quality* |
|---|---|---|---|
| *be drunk* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |
| *be beautiful* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |
| *love K.C.* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |
| *know arias* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |
| *walk* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |
| *smoke* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |
| *sing arias* | [Event]<br>[-Habitual] | [Event]<br>[+Habitual] | –<br>[-Habitual] |

We have seen that the feature [±Habitual] is related to the presence of adverbials such as *yleensä/usually*. In the next section, I will examine if the presence of this feature, and the presence of the feature [Event], is related in any way to the presence of manner, place and time adverbials in Finnish sentences.

## 7.3. The Behaviour of Adverbials with Episodes, Habits and Qualities

In the previous section, we have seen that all Finnish predicates can be used to refer to episodes, habits and qualities. We have also seen that the ability of predicates to function as episodic, habitual and quality predicates is due to their containing features like [Event] and [±Habitual]; the presence of such features is determined, by pragmatic considerations (by choices and intentions of speakers), when the predicate enters the numeration, for each occurrence of the predicate. Homophonic predicates with different feature specification are treated as distinct members of the numeration.

In this section, I examine if the features [Event] and [±Habitual] are involved in the licensing of Finnish manner, place and time adverbials. In particular, I investigate whether it is true that manner adverbials can be licensed by both eventive and non-eventive predicates (ie by predicates which are specified [Event] and by predicates

which are unspecified for this feature) whereas place and time adverbials can only be licensed by eventive, but not by non-eventive, predicates.

### 7.3.1. Manner Adverbials

In this sub-section, I examine the behaviour of manner adverbials with episodic, habitual and quality predicates:

(28) a. *Sirkku on humalassa tyylikkäällä tavalla.*
'Sirkku is drunk in a stylish way/with style'

b. *Sirkku on kaunis eksoottisella tavalla.*
'Sirkku is beautiful in an exotic way'

c. *Sirkku rakastaa Kevin Costneria tulisesti.*
'Sirkku loves Kevin Costner passionately'

d. *Sirkku osaa aarioita hyvin.*
'Sirkku knows arias well'

e. *Sirkku kävelee ontumalla.*
'Sirkku walks with limp'

f. *Sirkku tupakoi nautinnollisesti.*
'Sirkku smokes with enjoyment'

g. *Sirkku laulaa aarioita hyvin.*
'Sirkku sings arias well'

An episodic reading of a sentence is due to its predicate being associated with features like [Event] and [-Habitual], a habitual reading of a sentence is due to its predicate being associated with features like [Event] and [+Habitual], and a quality reading of a sentence is due to its predicate being associated with features like [-Habitual], when it emerges from the numeration. If the features [Event] and [±Habitual] are involved in the licensing of manner adverbials in any way, then some of these readings should be unavailable for sentences containing manner adverbials. For example, if the [Event] feature is involved in the licensing of manner adverbials so that eventive predicates can, but non-eventive predicates cannot, license manner adverbials in their relevant Spec/vP positions, we would expect the quality readings to be unavailable for sentences such as [28a-g].

However, empirical evidence suggests that all the sentences in [28a-g] can receive both episodic, habitual and quality readings. The episodic readings of [28a-g] refer to particular one-off episodes in which Sirkku is drunk in a stylish way, beautiful

in an exotic way, loves Kevin Costner passionately, or walks with a limp. The habitual readings of [28a-g] refer to the tendency that Sirkku has of being drunk in a stylish way, beautiful in an exotic way, and so on. The quality readings of [28a-g] refer to permanent characterising properties or qualities that Sirkku has: being drunk in a stylish way, beautiful in an exotic way, and so on are facts about Sirkku which are permanent, unalterable and in some sense possessed by her. Unlike habits, these facts are not based on a large number of episodes such that Sirkku is drunk in a stylish way, beautiful in an exotic way, loves Kevin Costner passionately, or walks with a limp. In the previous section, I proposed that some of these three readings are more natural than others: certain types of predicates tend to prefer certain interpretations, and the other interpretations are available only when there is a special facilitating context. The important point here is that the manner adverbials do not change the preferred readings of such predicates in any way.

Because manner adverbials can appear freely with episodic, habitual and quality predicates, we must conclude that the licensing of manner adverbials is not related to, or dependent on, the predicate's containing features such as [Event] and [±Habitual]. If it were, then either the episodic, the habitual or the quality reading should not be available in [28a-g]. The fact that they *are* available in [28a-g] supports the proposal made in the previous chapters of this thesis that manner adverbials are merged into the specifier positions of Manner-related light vPs, under semantic feature checking between the manner adverbials and the complex v heads; semantic feature checking alone to able to license manner adverbials.

### 7.3.2. Place Adverbials

In this sub-section, I examine if Finnish place adverbials can appear with episodic, habitual and quality predicates:

(29) a. *Sirkku on humalassa rannalla.*
'Sirkku is drunk on the beach'

b. *#Sirkku on kaunis rannalla.*
'Sirkku is beautiful on the beach'

c. *#Sirkku rakastaa Kevin Costneria suihkussa.*
'Sirkku loves Kevin Costner in the shower'

d. *#Sirkku osaa aarioita suihkussa.*
'Sirkku knows arias in the shower'

e. *Sirkku kävelee rannalla.*
'Sirkku walks on the beach'

f. *Sirkku tupakoi vessassa.*
'Sirkku smokes in the toilet'

g. *Sirkku laulaa aarioita suihkussa.*
'Sirkku sings arias in the shower'

Episodic readings of sentences are due to their predicates being specified [Event] and [-Habitual], habitual readings are due to their predicates being specified [Event] and [+Habitual] and quality readings are due to their predicates being specified [-Habitual], when they emerge from the numeration. Again, if the features [Event] and [±Habitual] are involved in the licensing of place adverbials, then some of these readings should be unavailable for sentences containing place adverbials. But a brief examination of the sentences in [29a-g] shows that they can all receive episodic, habitual and quality readings in Finnish. The episodic readings of [29a-g] refer to particular one-off episodes in which Sirkku is drunk on the beach, beautiful on the beach and so on while the habitual readings express generalizations over such episodes. The quality readings of [29a-g] refer, in turn, to a quality, ie to some permanent characterising property, that Sirkku has: being drunk on the beach, beautiful on the beach and so on, are interpreted as facts about Sirkku which are seen as being permanent, unalterable, and in some sense possessed by her.

However, if the episodic, habitual and quality readings are available to sentences such as [29a-g], then why are [29b-d] often seen as being slightly odd? In the previous section, I proposed that the predicates of [29b-d] tend to prefer quality readings - I now hypothesize that place adverbials are most typically selected by predicates which prefer episodic or habitual readings. Given these assumptions, the episodic and habitual readings of [29b-d] are odd because the predicates are interpreted in an exceptional way (ie as referring to episodes and habits, rather than to qualities), while the quality readings of [29b-d] are also odd because the predicates select exceptional arguments (ie because a quality predicate selects a place adverbial as its argument). In this sense, we are dealing with a no-win situation as there is no "preferred" reading available for sentences like [29b-d]. Instead, all three interpretations require the presence of a special facilitating context. But as pointed out in Carlson (1977); Krifka et al (1995), Diesing (1992) and Kratzer (1995) and also in Sections 7.1 and 7.2. of this thesis, the need for such a context does not make the sentences ungrammatical.

The idea that even quality predicates can select place adverbials as their arguments can be observed from [30a-d] and [31a-d]; for all these sentences, the

quality readings seem to be rather natural:

(30) a. *Sirkku painaa 50 kiloa.*
'Sirkku weighs 50 kilograms'

b. *Sirkku on naimisissa.*
'Sirkku is married'

c. *Sirkku on 30-vuotias.*
'Sirkku is 30 years old'

d. *Sirkku on idiootti.*
'Sirkku is an idiot'

(31) a. *Sirkku painaa 10 kiloa avaruudessa.*
'Sirkku weighs 10 kilograms in space'

b. *Sirkku on naimissa Kokkolassa.*
'Sirkku is married in Kokkola'

c. *Sirkku on 30-vuotias Koreassa.*
'Sirkku is 30 years old in Korea'

d. *Sirkku on idiootti poliisikuulusteluissa.*
'Sirkku is an idiot in police interrogations'

If non-eventive predicates (ie quality predicates) could not select place adverbials as their arguments at all, then sentences such as [31a-d] would have to receive only episodic and habitual readings. But empirical evidence suggests that they *can* receive quality readings. [31a] expresses the idea that Sirkku only weighs 10 kilograms in space; [31a] is true even if Sirkku is not in space (interestingly, [31a] would be true even if Sirkku has never been in space). [31a] does not have to refer to, or presuppose the existence of, any one or a large number of "Sirkku is in space and weighs only 10 kilograms" episodes. [31b] expresses the idea that Sirkku is married in Kokkola, and that she does not lose this property as soon as she crosses the town border. But it does not exclude this possibility either; this gives rise to the episodic and habitual readings.[16] [31c] allows Sirkku to be 28 years old in Finland and 30 years old in Korea, due to the different way in which age is calculated in these two countries; [31c] is true of Sirkku even if she is not in Korea, or has never been to Korea. And finally, [31d] allows Sirkku to be an idiot in police interrogations, but very smart in all other situations. But even in all these other situations, Sirkku still has the stable, long-lasting quality of being

[16] For example, due to different legislation, it is perfectly possible for someone to be married in one country, under that country's law, but not in another country, under that country's law. Or else, Sirkku might be a serial monogamist; this week, she is married in Kokkola but next week she will be married in Stockholm.

an idiot in police interrogations.

On the basis of the preceding data and considerations, we must conclude that the licensing of place adverbials is not dependent on the presence of the features [Event] and [±Habitual] on the predicate. Rather, semantic feature checking alone is able to license place adverbials. This is contradictory to the systems proposed in Diesing (1992), Chierchia (1995) and Kratzer (1995) who argue that place adverbials can only be fully licensed in sentences containing an extra Davidsonian argument position for events and spatio-temporal location. In the present thesis, if we analyse the [Event] feature as a syntactic feature which needs checking in an appropriate Event-related light vP, then it might be possible to merge the extra Davidsonian argument into the specifier position of this Event-related light vP. But this would not change the fact, illustrated by [29] through [31], that there is no need for the place adverbial to quantify over, or to be related in any way to, this extra Davidsonian argument.

### 7.3.3. Time Adverbials

In this sub-section, I look at the behaviour of Finnish time adverbials with episodic, habitual and quality predicates:

(32) a. *Sirkku on humalassa keskiyöllä.*
'Sirkku is drunk at midnight'

b. *#Sirkku on kaunis keskiyöllä.*
'Sirkku is beautiful at midnight'

c. *#Sirkku rakastaa Kevin Costneria keskiyöllä.*
'Sirkku loves Kevin Costner at midnight'

d. *#Sirkku osaa aarioita keskiyöllä.*
'Sirkku knows arias at midnight'

e. *Sirkku kävelee keskiyöllä.*
'Sirkku walks at midnight'

f. *Sirkku tupakoi keskiyöllä.*
'Sirkku smokes at midnight'

g. *Sirkku laulaa aarioita keskiyöllä.*
'Sirkku sings arias at midnight'

[32a-g] indicate that Finnish time adverbials behave in the same way as place adverbials in sentences containing episodic, habitual and quality predicates: even though [32a-g] can be interpreted as referring to episodes, habits and qualitites, the sentences in

[32b-d] are slightly odd because they have no preferred reading at all. In other words, the episodic and habitual readings of [32b-d] are odd because their respective predicates prefer quality readings, and the quality readings of [31b-d] are odd because time adverbials are are most typically selected by episodic and habitual predicates as their arguments. But again, this does not make [31b-d] ungrammatical. The episodic readings of [31a-g] refer to particular episodic events in which Sirkku is drunk at midnight while the habitual readings of [31] express the idea that Sirkku has the habit of being drunk at midnight. The quality readings of [31a-g] refer to the fundamental characterising property that Sirkku has, of being drunk at midnight.

On the basis of these data and considerations, we must conclude that time adverbials, just like manner and place adverbials, are always fully licensed by semantic feature checking against the appropriate light v head; their licensing is *not* related to, or dependent on, the presence of the [Event] feature on the predicate, or on the presence of an extra Davidsonian argument in the Event-related Spec/vP position.

### 7.3.4. Combinations of Finnish Manner, Place and Time Adverbials

In this sub-section, I discuss the interpretation of sentences such as [33a-n]:

(33) a. *Sirkku on humalassa tyylikkäällä tavalla rannalla.*
'Sirkku is drunk in a stylish way on the beach'

b. *Sirkku on humalassa tyylikkäällä tavalla keskiyöllä.*
'Sirkku is drunk in a stylish way at midnight'

c. *#Sirkku on kaunis eksoottisella tavalla rannalla.*
'Sirkku is beautiful in an exotic way on the beach'

d. *#Sirkku on kaunis eksoottisella tavalla keskiyöllä.*
'Sirkku is beautiful in an exotic way at midnight'

e. *#Sirkku rakastaa Kevin Costneria tulisesti suihkussa.*
'Sirkku loves Kevin Costner passionately in the shower'

f. *#Sirkku rakastaa Kevin Costneria tulisesti keskiyöllä.*
'Sirkku loves Kevin Costner passionately at midnight'

g. *#Sirkku osaa aarioita hyvin suihkussa.*
'Sirkku knows arias well in the shower'

h. *#Sirkku osaa aarioita hyvin keskiyöllä.*
'Sirkku knows arias well at midnight'

i. *Sirkku kävelee ontumalla rannalla.*
'Sirkku walks with a limp on the beach'

j. *Sirkku kävelee ontumalla keskiyöllä.*
'Sirkku walks with a limp at midnight'

k. *Sirkku tupakoi nautinnollisesti vessassa.*
'Sirkku smokes with enjoyment in the toilet'

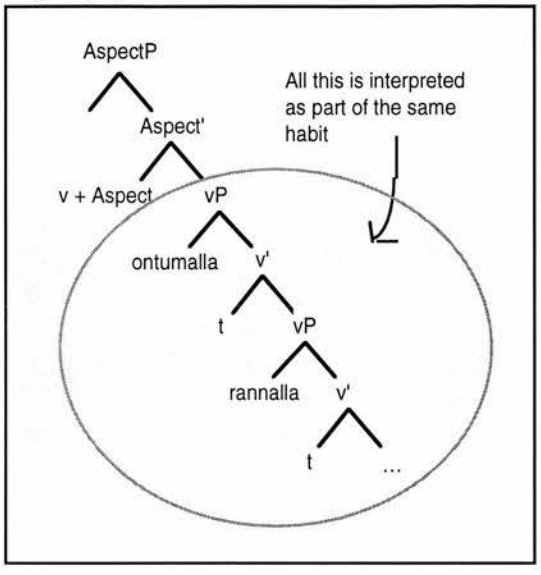
l. *Sirkku tupakoi nautinnollisesti keskiyöllä.*
'Sirkku smokes with enjoyment at midnight'

m. *Sirkku laulaa aarioita hyvin suihkussa.*
'Sirkku sings arias well in the shower'

n. *Sirkku laulaa aarioita hyvin keskiyöllä.*
'Sirkku sings arias well at midnight'

In Section 7.1. we observed an individual level interpretation of a sentence cannot consist of smaller "more primitive" individual level properties. [33a-n] can all be used to refer to episodes, habits and qualities. But even though sentences such as *Sirkku walks with a limp on the beach* as a whole can be used to refer to habits and qualities, they cannot at the same time be used to express the idea that walking with a limp is also a habit or a quality. The fact that habits and qualities cannot ever consist of smaller habits or qualities follows directly from our earlier assumptions: firstly, habits cannot consist of smaller habits because predicates can only be associated with one feature of the same kind. In other words, the lexical V can be associated with only one aspectual habitual feature and the derivation can only contain one aspectual habitual projection; all elements which are dominated by this aspectual habitual projection must be interpreted as parts of the same habit:

Diagram (7.4)




Secondly, habits cannot ever consist of qualitites; this is because quality readings are only available when the predicate is specified [-Habitual], when it emerges from the numeration; but in order to get a habitual reading, the same predicate would also have to be specified [+Habitual]. The fact that a single predicate cannot be specified both [-Habitual] and [+Habitual] also explains why qualities cannot ever consist of habits. But qualities cannot consist of episodes either: this is essentially because quality predicates cannot bear the feature [Event] whereas episodic predicates must always be specified [Event], when they emerge from the numeration; but clearly, a single predicate cannot both have and not have the feature [Event]. As a result, in the quality readings of [33a-n] above, all the adverbials must necessarily be interpreted as being parts of one and the same quality.

## 7.4. Concluding Remarks

In this chapter, I examined the behaviour of Finnish manner, place and time adverbials with episodic, habitual and quality predicates. In particular, I investigated whether Finnish supports the idea presented in Diesing (1992), Chierchia (1995) and Kratzer (1995) that place and time adverbials can only be fully licensed in sentences containing an extra Davidsonian argument for events and spatio-temporal location. After having discussed the systems proposed in Calson (1977), Krifka et al (1995), Diesing (1992), and Kratzer (1995) I showed that all Finnish predicates are "ambiguous" between an

episodic, a habitual and a quality reading, in the sense that a single predicate can emerge from the numeration specified for different types of features. I hypothesized that the presence of these features is due to pragmatic considerations, to choices and intentions of speakers, and is determined, for each occurrence of the predicate, when it enters the numeration. I then discussed the behaviour of manner, place, and time adverbials with episodic, habitual, and quality predicates; I showed that all these adverbials are fully licensed by semantic feature checking alone, so that there is no need for extra licensing conditions, such as the presence or absence of an extra Davidsonian argument.

# Chapter Eight

# Conclusion

The aim of this thesis was to examine Finnish manner adverbials and the structure of Finnish sentences. I started by asking a number of questions which are often problematic for the study of adverbials. In the individual chapters, I addressed these questions and provided answers which are in keeping with the theories of phrase structure proposed in Kayne (1994) and Chomsky (1989; 1993; 1994; 1995) and related work, and with the feature based systems of adverbials proposed in Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997).

In Chapter One, I discussed the basic properties of Finnish, whereas in Chapter Two I introduced parts of the minimalist framework which were of relevance to the study of manner adverbials and of the structure of Finnish sentences. I also discussed briefly the functional structure of Finnish sentences, on the basis of the systems proposed in Mitchell (1992), Holmberg et al (1993) and Nelson (1995). In Chapter Three, I looked at the previous analyses of adverbials which were of relevance. I began by discussing the treatment of adverbials within Government and Binding theory, and within the Linear Correspondence Axiom (LCA) of Kayne (1994) and the bare phrase structure theory of Chomsky (1993; 1994; 1995) and related work. I showed how the LCA and the bare phrase structure theory allow adverbials to be licensed either as specifiers or complements of $X^0$ heads, ie in specifier-head or head-complement constructions. I then reviewed the feature based systems of adverbials proposed in Laenzlinger (1996; 1998), Alexiadou (1997) and Cinque (1997), identifying the main problems with these studies, from the point of view of the present thesis. In particular, because these studies focus on the licensing of adverbs/AdvPs, they are only able to account for a very small amount of data. They also fail to recognize a number of striking similarities between adverbs/AdvPs and the other categories which function as (manner) adverbials in Finnish.

In Chapter Four, I examined the internal structure of Finnish manner adverbials.

After giving examples of different types of manner adverbials in Finnish, I discussed the system of case licensing by means of movement and feature checking. On the basis of Chomsky (1993; 1994; 1995) and Holmberg & Platzack (1995) I developed a system of structural and lexical case which rests on the idea that particular types of functional heads are able to check case features internally to their maximal projections. I also argued that nominal maximal projections (that is, DPs, PPs and KPs) are associated with a semantic feature [σ] which must be checked against the corresponding semantic feature on the licensing $X^0$ or functional $F^0$ head, when the maximal projection is selected and enters the derivation as a specifier of $X^0$ or functional $F^0$ - in other words, nominal items are always licensed in specifier-head configurations with a head bearing the relevant semantic feature [σ]. The advantage of the semantic feature checking operation, I argued, is that it provides a powerful way of ensuring that correct items are merged into the correct positions in the derivation. The conclusion that I reached in Chapter Four was that, under the system of structural and lexical case developed here, Finnish manner adverbials can be analysed uniformly as K(ase)Ps; in other words, instead of having the form of of DPs, AdjPs, NumPs, InfinitivalPs and AdvPs, they can be analysed uniformly as having the form of KPs. Furthermore, because manner adverbials can be analysed as having the same form, I predicted that they must be subject to the same licensing conditions and have the same distribution. At the end of Chapter Four, I discussed briefly the status of adverb/AdvPs as a separate word class and showed how an analysis of AdvPs as KPs allows us to explain many well-known similarities and differences between AdvPs and AdjPs.

In Chapters Five and Six, I provided arguments for the assumption that all manner adverbials, because they have uniformly the form of KPs, are subject to the same licensing conditions and have the same distribution in Finnish. In Chapter Five, I began by looking at the structure of Finnish transitive, unergative and unaccusative VPs. I adopted the view proposed in Larson (1988; 1990) and in Hale and Keyser (1993) of VPs consisting of layered VP shells, so that particular types of arguments are merged as specifiers of particular heads. I then developed a system of phrase structure within which arguments of the (verbal) predicate are merged as specifiers of light vPs, under semantic feature checking between the arguments and the light v heads. The conclusion that I reached was that the number and types of light vPs directly corresponds to the number and types of semantic features on the (verbal) predicate. Secondlyy, because the semantic features of predicates are hierarchically ordered with regard to each other, according to a strict universal hierarchy, the light vPs and the maximal projections in their respective specifier positions also end up being hierarchically ordered. At the end of Chapter Five, I examined the relation between

hierarchical structure and linear order. I hypothesized that, although light vPs are always hierarchically ordered according to a strict universal hierarchy, UG allows languages to vary as to the way in which this hierarchical structure corresponds to linear word order. In particular, UG allows elements appearing in different "segments" of a single category XP to permute.

In Chapter Six, my aim was to determine the original position of merge of Finnish manner adverbials. I began by showing that manner adverbials can function as both obligatory and optional verb/VP modifying adverbials in Finnish. I proposed that the computational system of language is unable to distinguish between obligatory and optional arguments of the predicate; instead, it treats all arguments in the same way. I took this to mean that obligatory and optional manner adverbials are merged into a unique Manner-related Spec/vP position by the computational system of language. Furthermore, they have the same distribution and behave in exactly the same way in linguistic operations such as extraction from islands and Wh-movement. After examining Finnish word order facts, anaphor binding, superiority effects and the behaviour of negative polarity items, I reached the conclusion that Finnish manner adverbials are merged into a unique Spec/vP position which is lower down in the structure than Spec/AgrOP. Furthermore, I concluded that Finnish manner, place and time adverbials, even though they are hierarchically ordered with regard to each other, are allowed to permute in linear word order; this is because they appear in Different "segments" of a single category XP.

In Chapter Seven, I discussed the behaviour of Finnish manner, place and time adverbials in sentences containing episodic, habitual and quality predicates. My aim was to investigate if manner, place and time adverbials are fully licensed by semantic feature checking against the appropriate Manner-, Place- and Time-related light v heads, or whether some additional licensing mechanisms are needed. In particular, my aim was to investigate if place and time adverbials can only be fully licensed in sentences containing an extra Davidsonian argument for events and spatio-temporal location. After creating a system within which the episodic, habitual and quality reading of the sentences is a result of its predicate containing combinations of the features [(±)Event] and [±Habitual] and after examining the interpretation of a large number of Finnish sentences, I reached the conclusion that manner, place and time adverbials are fully licensed by semantic feature checking against the appropriate light v heads. There is no need for any extra licensing conditions involving a Davidsonian argument.

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